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ANTIAIRCRAFT ARTILLERY US

Protection of Normally Deployed AAA Positions Against the Effects of Atomic Attack on Defended Areas

“WHAT about atomic attack?” No doubt every antiaircraft artillery officer and soldier has asked himself this question, perhaps in a moment of reflection, or when beginning to ponder over the plans, orders, and training programs that must, sooner or later, bring him face to face at last with a very real problem. “What to do about atomic attack,—what can be done?”

As the vague musings of first reflections begin to acquire a more tangible form, we ask ourselves, “Is my unit likely to be subject to an atomic attack?—If so, what kind of attack will it be?—What are the chances for the unit to survive?—Would it even be possible to continue performing our mission?—How can we increase our chances, not only of surviving, but of continuing to perform our mission?—What can we do now?—What can we do then?”

The first step in analyzing any military problem begins when an answer is found to the question, “What is my mission?—that is—what do I have to do?” This question can be answered by laying down four basic principles of atomic defense.

FIRST—The primary aim is to be able to carry on with the mission—at the least, to be ready for the “next attack.”

SECOND—The unit must be actively prepared to meet and survive the attack.

THIRD—Preparations must be made to minimize losses of personnel and equipment.

FOURTH—Preparations must be made to assist neighboring units, and where necessary, the local civilian populace.

Notice the keynote of these principles—*preparation*. When the attack comes,—when the bomb begins to fall,—when the blinding, brilliant radiance bursts forth in all its awesome terror—that will be too late. So, let us see what preparations we can make,—what we can plan and train for before it is too late.

Let us simplify our study of this problem by limiting its application to medium and heavy AAA gun battalions and the group and brigade headquarters in antiaircraft defense of vital areas. The application of our solutions and ideas can easily be adapted to almost any AAA unit or defense situation.

“What aspects of atomic attack by the enemy are most likely to affect AAA gun units and their higher headquarters?” Since it may be fairly presumed that, by this time, all or nearly all personnel in AAA units have received more or less basic instruction in the effects of atomic weapons and in defensive or protective measures against atomic attack, no attempt will be made here to review that information in detail. However, some of the main atomic weapons effects which have a direct bearing on problems confronting AAA units must be examined.

Figure 1 shows three graphical damage scales on which are condensed certain data concerning the most significant of the various types of effects resulting from the explosion of an atomic weapon. All the data contained in Figure 1 were obtained from “The Effects of Atomic Weapons” (an excellent, unclassified book for sale by the Superintendent of Documents, thru the JOURNAL, for \$1.25). Damage scales should be made to the same scale as the maps used in planning the

AAA defense. There is one scale provided for each of three “yields” of atomic bombs,—40 KT, 100 KT, and 200 KT. The “yield” of an atomic bomb is the term used to refer to the total amount of energy released by the bomb. Yields are expressed in terms of the equivalent amount, in thousands of tons, or kilotons (KT), of TNT required to release the same total amount of energy as the atomic bomb. The atomic bombs dropped on Japan had yields of approximately 20 KT. An atomic bomb of 20KT yield is commonly referred to as a “nominal” atomic bomb. The particular yields selected —40, 100, and 200 KT—were taken for illustrative purposes, only, as yields of hypothetical atomic bombs that would have twice, five times, and ten times, respectively, the yield of the “nominal” atomic bomb, and in no way do they represent yields, or orders of magnitude of yields, of actual atomic bombs.

On each of the effects scales there are marked off the approximate slant ranges from the point of burst of the particular yield bomb at which the following effects will exist:

- (A) The initial gamma radiation dosage (400 roentgens) which will be fatal to 50% of all persons exposed if untreated.
- (B) Severe blast damage (5.2 pounds per square inch overpressure).
- (C) Incendiary action and severe (third degree) skin burns (10 calories per square centimeter) on an average day.
- (D) Incendiary action and severe (third degree) skin burns (10 cal/sq cm) on a very clear day.
- (E) Moderate blast damage (2.7 p.s.i. overpressure).
- (F) Moderate (second degree) skin burns (3 cal/sq cm) on an average day.

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S UNDER ATOMIC ATTACK

By MAJOR NIEL M. WREIDT, Artillery

(G) Moderate (second degree) skin burns (3 cal/sq cm) on a very clear day.

The variables in an attack with atomic weapons are the number, location, yield, and height of burst of the atomic bombs which it is assumed will be employed by the enemy, and certain terrain and weather conditions. Also, for any given set of those variables, a different defense layout will affect the damage estimation. The variables in a defense layout are the size and shape of the vulnerable area, the number, type, and

location of the batteries, and the conditions of the enemy attack.

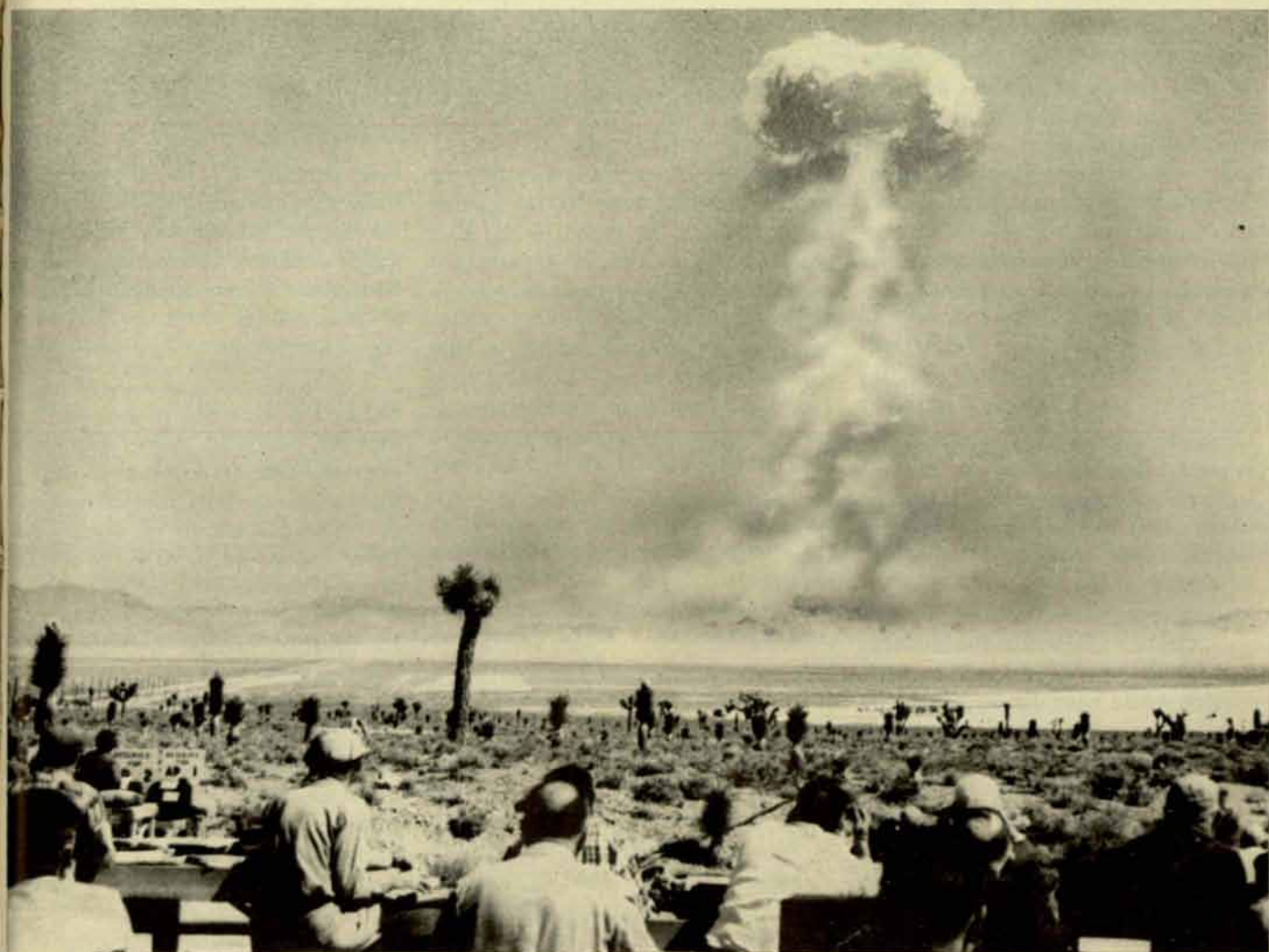
By analyzing typical AAA defenses, general conclusions can be drawn as to the type and degree of effects likely to be expected by AAA organizations in position defending a vulnerable area attacked with atomic bombs up to 200 KT in yield:

1. For large vulnerable areas (4000-5000 yards or more in radius) and extended AAA defenses, thermal radiation sufficient to cause moderate (second degree) skin burns might reach almost to the outer limits of a typical defense.

The inner limits of such a defense could receive third degree skin burns and incendiary action from the thermal radiation.

2. The AAA defenses of vulnerable areas of intermediate size (about 3000 yards in radius) could expect thermal effects ranging from third degree burns and incendiary action at the inner limits of the defenses to moderate (second degree) skin burns at the outer limits of the defenses.

3. For small vulnerable areas (2000 yards or smaller in radius), typical AAA defenses could expect initial gam-



ma radiation to be a minor effect (but no hazard) at the inner limits of the defenses. Severe thermal effects could be expected throughout approximately the inner half of the defenses, with moderate effects over the remainder.

The maximum effects ranges upon which the foregoing conclusions are based are obtained from bursts at 2000 feet over targets at or near the outer edges of the vulnerable areas. The ranges would be shorter for targets located closer to the centers of the vulnerable areas. In the foregoing conclusions, only thermal effects have been noted, for two reasons. First, nuclear radiations do not have sufficient range to affect likely AAA positions. Second, blast effects are not only apt to be comparatively slight at likely AAA positions, but their computation depends closely on the chosen height of burst, due to the reflection of the shock wave from the ground combining with the shock wave itself to produce what is known as a "Mach stem."

Having briefly outlined the magnitude of the maximum effects likely to be encountered at average AAA positions from up to a 200 KT atomic bomb, the next things to consider are the damage and casualties which would result from such effects and the defensive measures that should be taken. The Japanese experiences at Hiroshima and Nagasaki provide a basis for predicting the extent of damage which can be expected to result from various magnitudes of effects. Table I shows the average distances from GROUND ZERO at which certain results were observed in the atomic bombings of Japan.

Without delving into whatever experimental data there may be concerning the actual damage caused by atomic explosions on specific items of military equipment and matériel, certain general results can be estimated using the Japanese experience as a basis. In general, it can be stated that at the distances from GROUND ZERO which AAA positions would normally be placed, the blast damage would probably be light, and the thermal damage and casualties severe to moderate. Of the three types of atomic effects—nuclear, blast, and thermal—the thermal effects are militarily the most significant at the distances at which AAA positions are likely to be located.

TABLE I: JAPANESE DAMAGE (Distances in yards)

AVERAGE DISTANCE IN JAPAN	OVER- PRESSURE (p.s.i.)	WIND VELOCITY (m.p.h.)	DURATION (Sec.)	DAMAGE IN JAPAN
1333	10	270	0.77	Reinforced concrete smoke stack with 8-inch walls overturned. Roof tiles bubbled (melted by heat). 18-inch brick walls completely destroyed.
2000	5.2	160	0.98	Severe damage to entire area. Severe structural damage to steel frame buildings. 9-inch brick walls moderately cracked. Incendiary action; third degree skin burns.
2667	2.9	100	1.12	Severe damage to homes, heavy damage to window frames and doors. Foliage scorched by radiant heat.
3333	2.0	70	1.20	Blast damage to majority of homes. Severe fire damage expected. Flash ignition of dry combustible materials.
4000	1.5	50	1.25	Light damage to window frames and doors, moderate plaster damage. Light to moderate skin burns.

With respect to blast damage, the most susceptible items of equipment and matériel to be found in an AAA position are items such as radar antennas and fire control equipment in general. Undoubtedly the large fire control vans would be especially susceptible to blast damage. It can be estimated that most fire control equipment would suffer appreciable damage when subjected to blast shock waves of about 5 or more pounds per square inch peak overpressure. An interesting comparison is that the strength of an atomic shock wave required to destroy an average brick wall is only 4 pounds per square inch peak overpressure. Light damage to some fire control equipment may result from overpressures as low as 2 or 3 pounds per square inch. Tents and light structures would undoubtedly be susceptible. If gasoline tanks were ruptured, a fire hazard would be created. In the construction of the damage scales of Figure 1, "severe" blast damage due to 5.2 pounds per square inch occurs at the points marked (B), and "moderate"

blast damage, 2.7 pounds per square inch, at points marked (E). However, due to the "Mach stem" effect previously mentioned, these ranges should be regarded as very approximate.

AAA equipment and matériel in general are less susceptible to thermal effects than are personnel. Some communications equipment, if exposed, may be slightly damaged by thermal radiation of about 3 to 5 calories per square centimeter and would probably be severely damaged at about 10 cal/sq cm. Ammunition would probably not receive any thermal damage at normal AAA positions.

Gasoline in vehicle tanks or in cans would probably not be ignited by the thermal radiation directly. However, if the containers are ruptured by blast or flying debris, there may be a fire hazard, especially if nearby inflammable materials have been previously ignited. Whereas the thermal radiation from an atomic explosion is emitted very quickly,

the shock of the blast wave would not be felt until many seconds later. In Japan there was evidence that in some instances the blast waves had extinguished flames caused by the thermal radiation. Many of the fires that followed the explosion, moreover, were the result of secondary effects created by the blast damage, rather than by the initial thermal radiation.

Sandbags vary as to the composition of the material they are made of and as to whether the material is treated or untreated. Since sandbags are widely used in fortifying AAA positions, it is of interest to know whether they will be burned by the thermal radiation from atomic explosions, causing the sand to spill out, and thus weakening the fortifications or getting sand into equipment and onto ammunition. The average critical heat energy for the various types of sandbag materials in use indicates that, at the distances at which AAA positions are normally deployed in defense of vulnerable areas of about 3000 yards or more in radius, sandbags will withstand the effects of the thermal radiations likely to be encountered from up to a 200 KT atomic bomb. In the defenses of smaller vulnerable areas, AAA positions might be emplaced closely enough to likely GROUND ZERO points within the vulnerable areas to make sandbags susceptible to being burned. In such cases treated sandbags will offer an appreciably greater amount of protection than untreated sandbags.

Camouflage materials may also be susceptible to thermal incendiary action. In general, the same principles apply as for sandbags. However, ordinary camouflage materials are probably considerably more inflammable than sandbag materials, and hence create more of a hazard. If they cannot be especially treated, it might be advisable to use other materials which are less inflammable. Improvisation in such matters has always been one of the strong keynotes of the antiaircraft artilleryman's well-known versatility.

Personnel vary in their sensitivity to flash burns. However, for the average person, a thermal energy of about 1 or 2 cal/sq cm will produce slight (first degree) burns, about 3 cal/sq cm will produce moderate (second degree) burns, and about 10 cal/sq cm will produce severe (third degree) burns and

may also ignite some types of clothing. The extent of thermal radiation depends a great deal on the clarity of the atmosphere. The slant ranges in Figure 1 for 10 cal/sq cm on average and on very clear days are marked (C) and (D), respectively, and for 3 cal/sq cm, (E) and (F), respectively.

BEFORE estimating the probable effects of nuclear radiations upon the AAA defenses, it is well to state briefly what general types of casualties will be produced by various exposures. In the most severe exposures, close to ground zero, of probably several thousand roentgens, death may occur within a few hours. Exposure to 600 roentgens will be fatal in nearly all cases within 2 weeks. A 400 roentgen exposure results in the death of about 50% of the persons exposed from 2 to 12 weeks later. These predictions of fatalities presume no medical treatment. Moderate exposures from 100 to 300 roentgens may produce illness in about 2 weeks but are usually not fatal. Smaller exposures are not apt to produce any noticeable symptoms.

The figure most commonly used for planning purposes is the prompt, whole-body radiation exposure which will probably be eventually fatal to about 50% of the personnel exposed, if these personnel are not treated for radiation sickness. This figure is taken to be about 400 roentgens for the average individual. Most of the practical protective measures against gamma radiation are based on reducing the radiation intensity to below the 50% lethal dose level. The slant ranges at which individuals would be exposed to a radiation dosage of 400 roentgens from 40, 100, and 200 KT atomic bombs are indicated in Figure 1 by the points marked (A).

In a normal AAA defense, nuclear radiation will not usually constitute a hazard. Probably the greatest chance of an AAA position being exposed to a radiological hazard would occur if an enemy aircraft carrying an atomic bomb were damaged by fighter action or AAA fire. In such a situation the bomb might be deliberately jettisoned, or the plane might crash with the bomb still aboard. In the first instance, the bomb might explode normally with a full-scale explosion at the proper altitude,

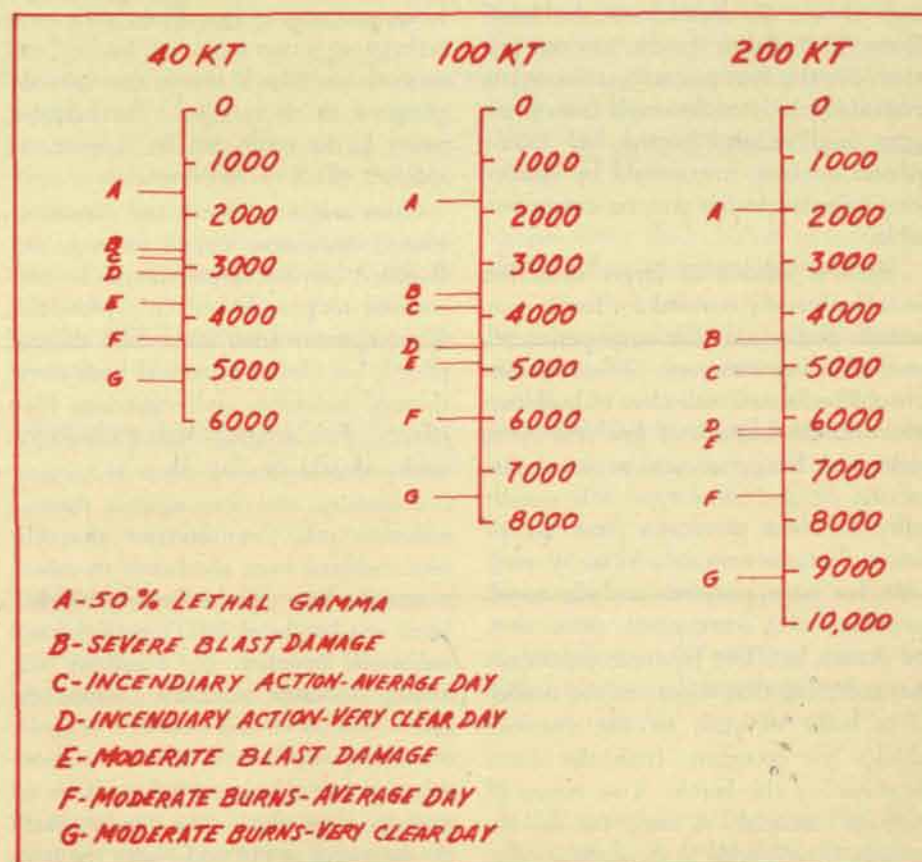


Figure 1—Damage Scales. Slant ranges in yards; hypothetical yields. Data obtained from "The Effects of Atomic Weapons."

or if the bomb itself were damaged, it might hit the ground and produce a nuclear fizzle explosion of somewhat less violence than a normal explosion. The nuclear fizzle might also occur if the plane crashed with the bomb still aboard. If such events occurred in the vicinity of an AAA position, then the radiological hazard might affect the AAA personnel in that area. The chances for these things to happen, however, are estimated as fairly remote.

COMMAND posts of higher headquarters, communications centers, operations centers and aid stations sometimes are established in buildings which are located conveniently to the defenses. If the buildings which are selected for these purposes are within the radius of moderate or severe blast damage, it may be desirable to provide shelters inside the buildings. Although this is frequently a complex problem, it is essentially the same for atomic as for ordinary high explosive bombs. Preferably the buildings chosen for such shelters should be fireproof, reinforced concrete, or steel frame buildings that are resistant to collapse. Shelters within these buildings should be located on the lower floors, in halls, or in the interior portions for the best protection. Secondary hazards such as might result from flying glass and debris, fixtures, or falling plaster, or from fire, should be avoided or eliminated to the greatest extent possible.

Shelters outside of larger structures would normally be used for lower command posts, aid stations, personnel, storage of key items, etc. These shelters should be located well clear of buildings to avoid the hazards of fire and flying debris. A buried or semi-buried shelter of the cut-and-cover type will usually offer the best protection from an air burst. Various materials normally available for such purposes include wood, sandbags, soil, corrugated sheet iron, oil drums, etc. The Japanese experience has indicated that doors are not needed if a baffle or turn in the entrance shields the occupants from the direct heat rays of the bomb. Two means of exit are essential. A ramp for the entrances is preferable to steps. Some digging tools should be placed inside as insurance against being trapped by

cave-ins.

Blast protection should be provided wherever the analysis of the damage situation for an AAA defense indicates the probability of blast damage to equipment and matériel or the possibility of casualties among personnel serving the equipment due to flying debris. Although the ability of the human body to withstand strong blast effects is well known, this does not mean that no protection for personnel is needed against blast. The secondary blast effects due to flying debris and collapsing structures or persons being flung about are far more important in producing casualties. A man standing in the open could probably be picked up and flung against a structure or onto the ground by a shock wave of 5 or more pounds per square inch overpressure. The injuries he might sustain in such a situation could be severe depending on the nature of the object he was flung against.

In the Japanese experience, the secondary effects accounted for about 50-60% of those killed and about 75% of the total casualties. The nature of the indirect injuries from blast varied from complete crushing, severe fractures, and serious lacerations with hemorrhage, to minor scratches, bruises, and contusions. Shock was a serious complication in many cases. Furthermore, many burns were also, in a sense, an indirect effect of the blast.

Guns and fire control and communications equipment should be protected. Fortified emplacements should be constructed to provide not only protection of equipment from blast and thermal effects, but also of personnel from direct thermal radiation and secondary blast effects. Fire control data transmission cables should be dug in.

Protective measures against thermal radiation take into account that the heat radiated from the bomb travels in a straight line. Thus, from a 100 KT burst at a height of 2000 feet, a thermal radiation intensity of 3 cal/sq cm, enough to cause moderate (second degree) skin burns and to scorch or ignite some materials, would occur at a horizontal range of about 6000 yards on an average clear day. The angle which the heat rays would make with the horizontal at that range is about 6.35 degrees. Therefore, personnel and equip-

ment which are partially behind fortifications will receive protection to the extent that they are below the line of sight from them, over the top of the parapet to the atomic burst.

In order to gain increased protection from the heat rays, the parapet should be raised, or if that cannot be done for some reason, a more or less temporary shielding can be placed to extend sufficiently above the parapet to give the needed protection. The shielding can be of any material which will not be ignited by the amount of heat calculated to be received at the position. For example, thin metal sheeting, wood, or cardboard might be used. Various kinds of wood will be ignited by heat energies from about 9 cal/sq cm for Douglas fir to about 25 cal/sq cm for black maple. These figures vary appreciably with the nature of the wood, its dryness, treatment, e.g., paint, varnish, etc. Cardboard and corrugated paper would probably burn around 5-10 cal/sq cm. The slant ranges at which heat intensities of 3 and 10 cal/sq cm would be received from 40, 100, and 200 KT atomic bombs are indicated on the damage scales in Figure 1. If wood or metal is used for shielding, proper precautions should be taken to stake it down firmly so that it will not become a hazard by being blown about by the blast wave.

If no other means of protection are available, the heat resistance value of clothing must be depended upon. Since the thermal energy from an atomic burst is emitted very quickly, the heat received does not have time to spread appreciably below the surface. At the distances for normally placed AAA positions, thermal radiation would not be expected to penetrate clothing, even though the outer clothing might scorch or char. Better protection is provided when there is more than one layer of clothing. Ordinary fatigue clothes will give fair protection against intensities of thermal radiation which would otherwise cause second and third degree burns.

PROTECTION against *initial* gamma radiation will not normally be required at most AAA positions except for the unusual cases mentioned previously. In the event of an atomic bomb detonation unusually close to an AAA position, close enough to constitute a



U.S. Army Photo

BATTERY D, 501st AAA GUN BN.

By raising the parapets higher around this gun pit the crew would receive better protection from the heat and blast effects of atomic explosions. Note no loose objects are lying around to become a hazard under an atomic shock wave.

radiation hazard, protection can be based upon two means: first, providing a sufficient mass of protective material between the individual and the atomic burst, including the rising ball of fire; and second, getting behind that mass of protective material quickly enough.

Now, at first glance the task may seem impossible, at least out in the field at an AAA position. The terms "sufficient mass of protective material" probably conjure up visions of thick concrete emplacements, which most of us will probably never have. And "quickly enough" may seem like the magician's hand which is quicker than the eye. Not so! The problem is really very simple.

First of all, we don't need concrete fortifications. Ordinary soil, when tightly packed, is about 60% as effective as concrete in cutting down on the gamma rays. This means that a little more than 30 inches of tightly-packed soil is about as effective as 20 inches of concrete. And 20 inches of concrete is sufficient to reduce a lethal dosage of about 10,000 roentgens to below the 50% lethal dosage

of 400 roentgens. Therefore, if AAA positions are adequately fortified against the normal hazards of conventional warfare, as well as the blast effects of atomic bursts, by means of cut-and-cover shelters, gun pits dug in and built up with earth and sandbags, etc., they will be adequately protected against intense gamma radiation if the parapets are high enough.

A man who is in an exposed position when the bomb bursts has a surprising amount of time to seek protection from gamma radiation. If he can duck into adequate cover within 10 seconds of the burst, he will only receive 80% of the radiation he would otherwise. If he can duck within 7 seconds, he can cut a 400 roentgen dose down to 300 roentgens, which will mean that he has saved his life. If he can duck within 1 second, he can cut an 800 roentgen dose down to 400 roentgens, thus improving his chances from sure death to a fifty-fifty chance even if untreated; if treated, his chances are better.

Now, when we talk about escaping

from exposures to serious doses of radiation, we must realize one thing. If we are close enough to an atomic explosion to receive serious doses of radiation, we are also close enough to be subjected to extremely severe blast and thermal effects. However, if some adequate protective cover is close at hand, the time factor, if we know it and utilize it, can still save us.

Most of the *gamma* radiation occurs between 0.1 second and 10 seconds. The *shock wave* travels faster than the speed of sound at first, but quickly slows down to a speed approaching that of sound. The closest that AAA positions will normally be to a GROUND ZERO point will be about 3000 yards. The shock wave from a nominal atomic bomb will arrive at that point in about 6 seconds.

If a battery is not busy firing, the men should be able to reach adequate cover within about 5 seconds. Some men might already be within sheltered positions; some would need more or less than 5 seconds to reach cover. Those who can take cover in 5 seconds or less will escape blast (including flying debris) and gamma rays, but not the heat rays. Thus it can be concluded that flash burns are the most likely type of injury to be sustained by AAA troops in position. But if the battery is busy firing, the men will not be able to take cover, and hence there will be more casualties, to whatever extent protective measures are not complete. The protection from flash burns afforded by clothing thus becomes very important.

There is another aspect of nuclear hazards,—the so-called *residual* nuclear radiations and contamination. In most circumstances, the fall-out of radioactive materials from the cloud column resulting from an air burst will not be a radiological hazard. The CBR personnel who are especially trained for the purpose will be able to monitor any radioactivity found with special radiation monitoring instruments. The chances of hazards to AAA positions due to residual nuclear radiations and contamination are probably very remote.

LET us consider a few ideas and hints which might be helpful in stimulating the planning for preparing AAA units to meet the requirements of the four

basic principles mentioned earlier.

One important idea which underlies all civil defense planning for atomic disaster and which could well be adopted by military organizations is this: help for stricken areas (units) must come from outside the stricken area (unit). Now if this help is to be timely and effective, some careful and thorough preparations are in order. Each unit—firing battery, headquarters batteries at all levels—should organize, train, and equip one or more *mobile* rescue teams. There should be a relatively large number (at least two per battery) of first aid teams, about half as many monitor teams, a few light rescue teams, and perhaps one or two heavy rescue teams established within an AAA group or brigade defense.

As we have already seen, the major medical problem will be the treatment of burns. Since there will undoubtedly not be enough medical personnel within an AAA unit to cope with the situation, and since a large percentage of men who will be burned can continue on duty if treated, it will pay real dividends to train *all* personnel thoroughly in first aid for burns. Furthermore, the medical supply situation is apt to become suddenly critical. Within the limits of available supplies, higher commanders should plan for stockage of supplies for burn treatment such as occlusive dressings, sedatives, etc., at each AAA position. The stockage at each position should not only be adequate for the estimated casualties there, but should also provide adequate supplies for any mobile first aid teams established there.

Commanding officers and medical officers of AAA units should remember that the AAA units located around an area struck by atomic bombs will undoubtedly find themselves rendering some kind of assistance to civilians. Within the limits of our ability, and keeping our primary mission foremost, we should plan accordingly.

Communications under disaster conditions are of vital importance. Most important of all will be mobile communications—that is, radios mounted on vehicles so that rescue teams and reconnaissance parties can report to and be controlled by a central authority. Radio is thus seen to acquire a primary status among the means of communication under disaster conditions, whereas in static

AAA defenses wire is usually regarded as the primary means. Provision must be made, and our thinking geared, for the quick and effective change of the primary means of communication. Within a battery position, however, wire will, of course, remain the primary means. But if it is to survive blast and heat, it must be adequately protected. Local wire should be dug in. Depending upon the nature of the soil, almost any depth sufficient to cover the wire will probably be adequate. About 6 inches should do the job in average soil. If for some reason the wire cannot be dug in or otherwise protected, provision should be made for rapid and complete replacement of the entire system. This should apply also to non-local wire,—that is,—from one position to another,—all the wire in an AAA defense.

Key communications facilities should be adequately fortified. If it is necessary that they be placed in severe damage zones, duplicate facilities, completely equipped, should be provided in locations which are out of danger.

SUPPLY officers' problems are likely to be tremendous. The proper location of supply points with respect to damage zones may save a lot of trouble. Re-supply after the extensive damage likely to be caused by an atomic attack will make heavy demands upon the supply officer's organization and facilities. Items which are not commonly matters of re-supply are likely to become so very suddenly and in large quantities. This will have an impact all the way back up the supply channels. With proper planning for emergency re-supply, AAA defenses need not be thrown for a loss for lack of supplies after an atomic attack.

After the shock wave from an atomic blast has passed a gun position, and as soon as the situation permits, one of the things that should be checked which might be overlooked if there has been only slight or no damage, is the orientation (and perhaps synchronization, also) of the elements of the battery. All equipment and matériel necessary for firing should be inspected and run through appropriate checks to insure an accurately firing battery as soon as possible after the attack.

Probably among the most vulnerable

of the essential equipment in a gun battery is the fire control equipment. It is conceivable that an AAA battery might receive damage severe enough to put its fire control system out of commission but not its guns or the personnel to man the guns. Should, then, the guns be allowed to stand useless if the engagement continues or if there is another attack before the fire control equipment is replaced? Not necessarily. Here is where the improvisation and versatility for which the AAA is famous are brought to bear upon the problem. Although not as effective as continuously pointed, continuous fire, there are various types of barrage fire methods which can be used. Plan and prepare now for the improvisation which may suddenly be thrust upon you!

To sum it all up, the keynote of success against atomic attack is *planning* and *preparation*. Of course we all know it, but don't forget that many a good plan failed because the right people didn't know about it, or because the troops and staffs who would have to execute it had not been adequately prepared and trained to execute it rapidly and efficiently. The psychological impact of an atomic explosion is so great that only thorough preparation, by indoctrination, by training, by laying in the right supplies, by building the necessary fortifications, will enable prompt recovery and continuation of the mission. Idle thinking, or even ardent planning, will not alone suffice.

The day of atomic warfare is here. Make no mistake about it—atomic weapons will be used against sufficiently important targets. And don't forget that any vulnerable area which has been given AAA protection is unquestionably of sufficient importance to be a target for atomic attack.

The atomic weapon is not an "absolute" weapon. It is a weapon to be respected greatly, but it should not be regarded with panic or unreasoning fear. We have seen the kind of damage and casualties typical AAA defenses are likely to receive from atomic bombs up to ten times as powerful as those used at Hiroshima and Nagasaki. And we now know how, with proper preparation, we can successfully meet and survive the attack, and continue to perform our AAA mission with minimum losses of personnel and equipment.



Press Association

GROUND FORCE MOBILITY*

Modern warfare is mobile warfare. The nation that acts on the lessons of history will field forces predestined for victory

By **BRIGADIER GENERAL PAUL M. ROBINETT**

IN a military sense mobility implies more than just mobility in equipment and in organization. It is also a state of mind. If it does not exist in the minds of responsible high level civilian and military leaders, mobility is impossible on the battlefield even though equipment and the organization of forces make it possible. The lack of mobility in mind will result in rigid, shortsighted plans and in sloth-like operations which will tend to degenerate into static sit-

uations. On the other hand, mobile-minded leadership, lacking mobile weapons and organization and adequate logistical preparation for the operations, can only develop unsound projects which will ultimately lead to disaster. So it is that static or defensive warfare is the refuge of mediocre civilian and military leaders and mobile warfare the pitfall of the incautious. These two possibilities are the scarlet threads that run through all of recorded military history.

The story of war is the record of an unending contest between the proponents of static and mobile concepts.

We are used to seeing the Army sit back quietly while the Air Force and the Navy representatives sound off in their battle for headlines and the lions share of the federal budget.

When our friends in the Armor Association met at Fort Knox, Kentucky

in January in their annual meeting they started an interesting variation in this pattern. They started the delivery of a strong organized punch for Armor and its importance in our national defense.

General Jacob L. Devers, retired Army Field Forces Chief, Lieutenant General Edward H. Brooks, Retiring Second Army Commander, and Lieutenant General Willis D. Crittenger, retired First Army Commander and Armor Association President, delivered urgent speeches for increasing and massing our Armored forces in the Army.

Following this meeting the March-April *Armor* published as the lead article Ground Force Mobility by Brigadier General Paul M. Robinett. As this article has attracted widespread attention from the American Press, we reprint it here in full through the courtesy of the author and *Armor*.—Ed.

*Reprinted by permission, from *Armor*, March-April 1953 issue.

Brigadier General Paul M. Robinett, retired, writes from the experience of a career in the mobile arm. Leader of a Combat Command of 1st Armored Division in the Tunisian Campaign in World War II, he is now Chief of the Foreign Studies Branch, Office of the Chief of Military History, U. S. Army.

Napoleon, for example, came upon the scene at a time when the armies of Europe had fallen into a fixed pattern and military operations were conducted in a sluggish, geometric manner. It was the end of the period of mercenaries. He adopted a revolutionary practice by developing military organization in an army of the masses which was capable of moving with great rapidity, of living off the country, and of striking with great violence at a decisive place and time. Napoleon was a genius of maneuver and, for a time, of logistics. In the end, however, he brought about his own ruin in pursuit of the elusive Russian Army beyond the limits of his mobility and in disregard of logistical considerations.

Another great disciple of mobility was Hitler. Taking advantage of the industrial potential of his country, of the military decadence of his neighbors, and of the disarmed status of Germany, he developed military organization and equipment of great mobility and offensive striking power. Consequently, by 1939 all opposing ground forces were obsolete and ripe for destruction. But the Fuehrer was an impatient man and launched a series of lightning wars before his machine was fully built. He won some of the greatest victories of all time but to no avail. His obsession for mobility and his lack of comprehension of logistical considerations led him into the limitless depths of the Soviet Union without having taken the precaution of preparing for a winter campaign; led him beyond the capabilities of his mobile forces, and ultimately to his doom. Hitler entered upon this venture with less than 3,500 Mark II, III, and IV tanks while, Guderian estimates, the Soviets had 17,000 tanks in 1937 and had increased the number by the time the campaign opened on 22 June 1941. But the great surprise to the Germans was the appearance of the superior Soviet T-34 tank near the limit of their penetration.

INTERESTING examples of offensive mobile-minded high commands, lacking the means for mobile operations or the ability to concentrate those available, were those of France and of Germany at the beginning of World War I. The high commands of both nations had decided upon the offensive and each of them attempted to launch a great



Library of Congress
Napoleon

attack at the outbreak of hostilities. The French forces were quickly thrown back and were fighting for existence in a series of retrograde actions. On the other hand, the German high command, although tactically successful, lacked energy and weakened the enveloping forces by detaching elements to the east and by failing to mass the cavalry on the exposed right flank. It soon lost the ability to continue the offensive and was forced back upon the defensive. It had hoped that by repeated limited objective attacks it could hold the initiative and eventually wear down and destroy the Allies in the west. But it failed completely when the weight of the United States Army tipped the scales against Germany. Genius was lacking on both sides during the prewar planning and organization of forces and in the actual employment of existing mobile forces in the conduct of operations.

The possibilities of mobile warfare



Captured German Photo
Hitler

were not fully tested in World War II because of a lack of imagination in the preparation of plans and in the organization of forces. The chiefs of the various military establishments and their principal staff subordinates were of traditionally conservative mold—some more than others. In Great Britain, France, and the United States the idea of mobile warfare was not welcome. There were some advances in mobility but its advocates, particularly in Great Britain and France, had no official part in the preparation of either plans or forces. Many advocates of mobility, notably Fuller, Liddell Hart, and De Gaulle, were to have more influence in the enemy camp than in their own lands. In Germany, Guderian's ideas of mobility were no better received in the General Staff. On gaining control in 1933, Hitler quickly adopted the idea of mechanized warfare, but his administrative organization was inefficient. Finally, he was lured into precipitate action by the prospects of quick and sure tactical successes but with the Panzer command still in an incomplete state and its destructive operational possibilities imperfectly understood. Although improvements were made and Panzer corps and armies were created, the German armored force was never as fully developed as mobile-minded commanders, such as Guderian, planned, but remained a makeshift substitute to the end. It was so because Hitler made twenty-five Panzer divisions out of ten without increasing his tank strength proportionately. Neither did German invention and production ever match Hitler's requirements, which were far greater than he envisaged. Thus he won only tactical successes and eventually suffered an annihilating defeat. The mobile-minded Fuehrer came to his tragic end still commanding imaginary mobile forces, which in reality existed only on paper.

In the United States mobile-minded men were denied responsible posts in the War Department. They had no part whatsoever in planning the World War II Army or in formulating strategic plans for the employment of the Army. German blitz successes in Poland were rather lightly regarded, but the fall of France, under the crushing blows of Kleist's and Guderian's Panzer forces, made a profound impression. However, the basic reasons for the German victory in the west were not well understood.

It resulted from a strategic surprise, from the speed and violence of the attack by massed and coordinated Luftwaffe and Panzer forces on a narrow front at the point of main effort, from the speedy exploitation of the breakthrough, and from the relentless pursuit of the broken Anglo-French armies.

FOLLOWING the German successes in Western Europe, the Armored Force, with almost autonomous authority, was quickly created by the War Department on 10 July 1940 and General Chaffee, a long-time advocate of mobile warfare, placed at the head. He had the vision so lacking in the War Department, but death intervened and his grand idea was soon blighted by less imaginative minds. The crisis in Europe having ameliorated, the traditionalists in the War Department reverted to form. Effort and means that should have gone into the creation of an offensive mobile force of armored corps and armies were squandered in developing inefficient antitank organizations and equipment. Some of the latter, as for example a 37mm gun mounted in the tail end of a light truck and a 75mm gun mounted in the front end of a halftrack, although probably adopted only as stopgap equipment, were retained too long and proved useless and sometimes even tragic to the little band which fought the meeting engagement with German troops in Africa. Yet it cost many millions of dollars and, most unfortunately, represented the squandering of military personnel, of strategic materials, and of labor on defensive organizations. This violation of the principle of economy of force and of means, together with others, could have been responsible for our defeat had the balance been more closely drawn than it was.

Finally, when Germany culminated a blitz through the Balkans by seizing Crete with airborne troops, the War Department, not knowing the exorbitant cost of the apparent victory in blood and matériel, created an excessively large airborne force—the most costly and the least mobile form of ground troops. But worse still, these units were allowed to recruit the adventurous, dynamic, mobile-minded personnel from the Army. This tended to reduce the quality of the infantry, armor, and artillery personnel because the Air Forces got first choice.



Chaffee

U. S. Army

In the European Theater the lack of mobile mindedness in the War Department was equally apparent in Allied Force Headquarters and in 12th Army Group Headquarters. All of the principal commanders and staff officers assigned to these two important headquarters were soundly based in traditional broad front operations by infantry. The concepts of battle and of logistical support originating in these headquarters displayed a uniform lack of imagination in concepts of mobility. A mobile-minded subordinate, General Patton, frequently achieved limited successes by circumventing his superiors, but he was not even able to destroy the German Fifteenth Army which extricated itself from France, established a defensive position, and inflicted very heavy casualties before being driven out.

General Chaffee had envisaged a mobile force including armored corps and armored armies. But before the battle



Sherman

Library of Congress

was joined the armored corps was abandoned and all ideas of armored armies discarded in favor of a more even distribution of mobile troops throughout the field forces. For example, during operations in Europe a typical American corps included one armored and two infantry divisions and, in time, each infantry division included one or more separate tank battalions. Such an allotment of armored elements did not materially increase the mobility of infantry divisions or corps. But, on the contrary, it precluded the creation of efficient armored corps and armies capable of cross-country mobility in all their parts. This inevitably led to operations on a broad front with lack of armor concentration at points of main effort. Consequently, the Anglo-American campaign in the West was a conventional operation in which superior numbers of men and equipment overcame a failing enemy, hopelessly thrown back everywhere upon the defensive. The possibility existed for a classical and speedy victory of enormous proportions. But this would have required the concentration of a highly mobile armored army on the right flank, backed with adequate logistical support both on the ground and from the air. The actual performance of General Patton's Third Army on the right flank during its drive across France furnished only a hint of what might have been accomplished by an adequately supported armored army on that flank. General Patton was mobile-minded but his army was only a typical American army, not an armored army, and lacked the necessary logistical support from the air and on the ground. This support could have been furnished had higher staffs been mobile-minded in sufficient time to prepare the means. Little could be done by improvisation.

A CONTRIBUTING factor to the mediocrity of the Anglo-American victory in Western Europe during World War II, one which clearly indicated the lack of mobile mindedness, was the multiplicity of overstuffed headquarters in the chain of command and the excessive control exercised by these headquarters. From the divisions and corps, the chain extended back through army, army group, and Allied Force to the Combined Chiefs of Staff and the Chiefs of State—Churchill and Roose-

vult. This, however, does not reveal the real situation: because various headquarters had deputy commanders the practical effect was to still further lengthen the chain of command. Over-stuffed staffs tended to slow down decisions, to retard the flow of information, and to delay the transmission of orders. Illustrative of overstaffing was General Eisenhower's headquarters which included more than 16,000 officers and enlisted men during operations and more than 30,000 by the time the occupation of Germany was under way. The troops serving under such command arrangements were not even capable of the mobility inherent in their equipment and organization. Sloth-like operations and a tendency to fall back upon the defensive inevitably resulted and were generally overcome by the initiative and resolution of troop leaders near the front.

American planners would do well to turn to history for a few basic principles concerning staffs rather than blindly accept the World War II pattern. Von Steuben was a capable general staff officer. He sums up his experience as follows: "My observation is where one person is found adequate to the discharge of a duty by close application, it is worse executed by two and scarcely done at all by three." Still later, General William T. Sherman, the outstanding Army commander of the Civil War, severely criticised large staffs in these words: "A bulky staff implies a division of responsibility, slowness of action, and indecision, whereas a small staff implies activity and concentration of purpose." The severest criticism of an overlengthened chain of command has been made by the profound student of war, Clausewitz, who has said: "... an order loses in rapidity, force, and exactness if the graduation ladder down which it has to descend is long. . . ." Even if allowance was made for the simplicity of warfare during the days of Von Steuben and Sherman, little justification can be found for the excessively large staffs during World War II. Their conclusions still apply. Something must be done to prevent the staffs from degenerating into intellectual boondoggling. There are degrees of refinement in staff work which go far beyond the practical requirements of the armed forces and a marked tendency for intellectuals to worm their way into such work. This

tendency should be resisted in order that the intellectuals may shoulder their full responsibilities as fighting men and leaders.

Sufficient information is not yet at hand to fully analyze the Soviet performance in Eastern Europe but enough information is available to indicate that the Communists' performance on that front was rather mediocre considering the means at their disposal, the nature of the terrain over which the fighting took place, the determination of Hitler to hold ground, and the weight of the ground and air effort of the Allies from the West. With a few exceptions, nota-



Patton

U. S. Army

bly the Russian breakthrough and advance to Warsaw in the summer of 1944, the Soviet effort was little more than a methodical advance on a broad front during which German resistance was simply ground underfoot.

The American situation following World War II was that of a victor with all the advantages and disadvantages that usually accrue to a nation under such circumstances. Having destroyed the menace posed by the German and Japanese war machines, with the help of allies, it found itself one of the two remaining great powers. Unlike the other, however, the United States, while retaining the atom bomb, abandoned its armed forces and lost, through improper storage, or scrapped its military equipment. On the other hand, the Soviet Union retained its armed forces and equipment and adopted a line of action diametrically opposed to that of its former associate. As a result of these opposite decisions, preponderance of

force almost immediately passed to the Soviet Union and led it to become increasingly belligerent in all its actions. To rectify the imbalance it had itself created, the United States was forced to expand its armed forces and to initiate an enormous re-armament program. Herein is found the opportunity of all nations which build their military organization and armament last.

FOLLOWING World War I, Germany was stripped of armament and denied the right to build certain types such as tanks and airplanes. On the other hand the Allied nations retained old armament and expended little upon new developments. When Germany re-armed, it took advantage of considerable research into the weapons of other armies but neither copied the old ones they had been compelled to abandon nor the new ones of other nations. It developed weapons and organization with which to destroy the armed forces of its prospective enemies. Following World War II the United States demobilized its armed forces and scrapped about 80 per cent of its equipment while the Soviet Union retained the mass of its equipment. Consequently, it created for the United States the same advantage that Germany had following World War I. Taking a lesson from German experience, military forces and equipment retained by the Soviet Union could have been rendered utterly obsolete by developing a more flexible and mobile organization with superior weapons. When caught in a predicament such as that of the United States, however, the natural tendency is to develop quickly the military organization and equipment necessary to counter the enemy rather than those intended to defeat and destroy him. This natural tendency is, therefore, defensive and static and not offensive and mobile and should be avoided.

There is already certain evidence to show that American civilian and military leadership has followed the natural tendency and has lost faith in the most mobile ground weapon—the tank. In this connection we need only recall the statement of Secretary of the Army Pace to the West Point cadets on 6 June 1950:

The principles of the recoilless

weapon, the bazooka, and the shaped charge are being developed to a point where the mechanized panzer blitzkrieg will play a much less decisive role than it did in the last war.

Adding to those the more recent developments with regard to guided missiles and rockets, target seeking equipment, and the possibilities of tactical use of atomic weapons, it may well be that tank warfare as we have known it will soon be obsolete.

In addition to official pronouncements indicating a loss of faith in mobility and the mobile arm, the postwar field exercises have written out this lack of faith on the ground. There is, however, evidence to show that our leaders have put their faith in airborne troops which some of them consider to have the highest order of mobility. General Bolte has said that our objective is airborne armies. But an analysis of the facts will show conclusively that airborne troops are the least mobile of all ground fighters, although primarily for offensive warfare and tied to other ground elements. For example, on several occasions in World War II, it was planned to use airborne troops but ground elements had already seized the objective before they could be launched. Unless carefully coordinated with armored elements, airborne troops are inevitably drawn into piecemeal action at a time when they are bruised, battered, and confused by the landing. At the very best they are but light troops incapable of sustained action or of standing against heavily equipped, mobile ground troops. There is a role for airborne troops, but it is not to win wars by themselves. Such troops are of highest importance to armored corps and armies in seizing defiles and airfields essential for rapid sustained operations and in partisan activities behind the enemy's front. Airborne and armored elements and air forces must be trained together continuously if they are to function efficiently as a team.

The defensive mindedness of our cur-

rent leadership has led to the parceling out of mobile armored troops and of permanently tying them to the capabilities of foot soldiers having only a nylon suit and a steel helmet to protect them from enemy fire. This dispersal of the mobile elements of the Army will lead to static actions on a broad front and, even if successful, will result in position warfare based upon mobile equipment, fire power, and manpower. This is just as fallacious as the passive defense based on field fortifications, obstacles, mines, and fire power such as the Maginot Line. Decisive results can never be achieved by such immobile measures.

IF the United States abandons the dominant principle of mobility in favor of the static concept, it will forfeit its best chance of winning the next great war. It lacks the necessary manpower for such a concept. Besides, such a concept would be faulty even if the manpower were available. If the genius of the American people is fully employed in developing the forces required to win the next war, advantage would be taken of their mechanical ability and productive capacity. This would lead to the organization of armored, full-tracked corps and perhaps armies capable of being operationally and logistically supported from the air and of operating in the great plains areas of the world towards decisive geographical, political, and production centers without regard to frontiers or linear defenses established by the enemy and would lead also to the organization of light troops capable of effecting the final subjugation, occupation, and administration of territories overrun by the mobile army.

The modern mobile army should be capable of operating logistically from landing areas in much the same way that fleets operate from naval bases. Advance into hostile territory should be from landing areas to landing areas and operations should be extended from such

areas as bases. Such an organization, coordinated with a dominant and properly constituted air force capable of all support missions including the delivering of essential airborne troops and the atomic bomb, could overwhelm any armed force that exists in the world today. With it the true genius of our native military leadership would rise again to the level set by General Grant and his mighty team of Meade and Sheridan in the east and Sherman in the west and south. In cooperation with the blockading fleets at sea this combination brought the Civil War to an end. A proper mobile force, with up-to-date support in the air and on the sea and with the guidance of gifted leaders, might again take the risk, incident to a deep penetration into the enemy's heartland, that Sherman took, and would reap an even greater harvest. The logistical plan for Sherman's operation contemplated living off the country, but his wagon train carried the minimum requirements necessary to reach a base at Savannah, Ga. That was the reserve that reduced considerably the risk he took.

It is the historical example that needs careful study by those who would fully exploit the possibilities of mobile warfare in this era of cross-country tracked vehicles, airplanes, guided missiles, and atomic bombs. Air power has made it possible for an armored force, completely mounted in cross-country fighting vehicles, to operate on land in much the same fashion as an air-supported fleet operates on sea. This modifies the orthodox concepts of linear or broad front tactics and of secure lines of ground communications in war.

The problem of combining air power and mobile ground forces into an offensive team is the challenge that confronts American military leadership in the dangerous days that lie ahead. This is the combination that can relieve the infantry of the bloody battles of broad front operations.

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ROK TRAINING BY 10th AAA GROUP

The 10th AAA Group is evidently right in line with the stepped-up training for ROK Army troops. Colonel Charles G. Dunn, commander, reports that the first antiaircraft training on the self-propelled M16 with its quad fifty

od—much work and little talk. He also stressed the value of training aids and remarked that some of the ROK students with artistic ability were a great help in making up some of the training aids.

We note particularly his recommendations that:

► "Adequate training aids be provided to include graphic training aids in sufficient quantities, instructional stands, cutaway models and facilities to use training films. In ROKA training, it was found that to make explanatory remarks supporting graphic representation was the most effective method.

"Supply and Ordnance support be established in ROKA channels prior to issue of armament. This is most important to adequately support maintenance and repair of vehicles and weapons.

"At least a five day period be provided for instructor personnel and

ROKA interpreters to get acquainted and accustomed to scope of instruction and special weapons terminology.

"A qualified Ordnance maintenance section with adequate supply of critical spare parts be provided for maintenance



U.S. Army Photo

Capt. Stachelski briefs Col. Stilwell, Senior Advisor, and Lt. Gen. Lee Heung Koon, Commander I ROK Corps.

mount was conducted for 200 selected officers and men from the I and II ROK Corps during the period April 1st to 20th. Captain Alexander C. Stachelski was in charge of the instruction team which included nine other officers and ten enlisted men, all hand picked.

The instruction included driving, operation of all equipment, target practice at aerial targets, and maintenance.

In Captain Stachelski's interesting final report he mentioned particularly the sixteen Korean interpreters available and how the language barrier made necessary the stress on the applicatory meth-



U.S. Army Photo

Lt. Cooke, 50th AAA AW Bn, teaches how to orient.



U.S. Army Photo

Target Practice.

of both weapons and vehicular equipment. This section could be used both for maintenance of weapons and instruction of ROKA Ordnance personnel."

We also note that Captain Stachelski and his instructor group were commended by Lieut. Gen. Lee Heung Koon, Commanding General of the I ROK Corps, in which he emphasized:

"To a man, your group displayed an industry, an efficiency and a spirit of cooperation of superior caliber. The well prepared, thorough, and clear-cut program of instruction was a credit both to the technical proficiency of the supervisory personnel and to their high motivation."

ROK ACK ACK TRAINING

By PFC VINCE DOWNING

PIO 25th Infantry Division

LESS than three years ago SFC Kim Yon Kun, 9th ROK Division, led the quiet, routine life of a farmer in Central Korea. Then on June 25, 1950 North Korea struck. With the Communist forces sweeping into South Korea his peaceful life underwent volcanic

changes. This spring he won't work the age old plow, symbol of order and security; he'll direct the deadly fire of a quad fifty.

As a specially selected student of the 25th Division's Quad Lightning Academy, a light antiaircraft artillery school

for ROK troops, Kim Yon Kun is learning how to blast Communist aircraft from the sky. After 17 days of intensive training under American instructors the former farmer will be a qualified gunner and moved to the front lines in support of his division.

The academy is training 18 complete crews in the operation of the weapon, in a complete course. Training received by Korean soldiers is a carbon copy of American artillery schools only in more concentrated form.

Sergeant First Class Kim Yon Kun is typical of the other students drawn from ROK Divisions. Thrust from an aged farm society, he has had to make drastic adjustments to the mechanized complications of modern warfare. Three years of combat experience have singled him out as a part of an elite corps of Korean soldiers chosen for specialized training.

The academy is part of an overall program to strengthen the fighting power of the ROK divisions. With Korean soldiers taking over ack ack positions the ROK divisions achieve more fighting strength and independence.

"The Communists better look out for these boys," said 1st Lt. Kenneth E. Wood, School Director from 21st AAA Battalion. "If the enemy starts any air activity he'll find a well trained group of fighters that can use the quad fifty with death dealing accuracy."

Classes are small in number because of the amount of material to be covered in a short time. Language difficulties of translating English into Korean would make large classes impractical. As a member of the average class of six students, Kun listens to instruction first in English and then in Korean. Classes are interpreted by ROK officers who are also studying the quad fifty.

Echoing the opinion of American instructors at the school, Col. Daniel B.

Williams, Battalion Commander of the 21st AAA Battalion and former instructor of gunnery at Fort Bliss, said that the Koreans' reaction to the classes was "terrific."

"These ROK soldiers have picked up the instruction on the quad fifty like lightning," said Williams. "Being a select group, they make number one students. Besides their country's protection is at stake."

Kun is part of the artillery section of the school. Some of his fellow soldiers are attending the drivers school, second division of the Quad Lightning Academy. At the end of two weeks the twin sections are united into a working team. The drivers maneuver the half track into a position where the artillerymen fire the weapon.

In the course of his training, Kun is instructed in all aspects of the 50 cal machine gun and the uses of the quad fifty. Particular stress is put on battle situations that have developed in Korea.

For the first week the former farmer learns individual subjects. On the 50 cal machine gun he studies the breakdown, maintenance, and operation of the weapon. He learns the techniques of communication, the fine points of tactics, and the practice of direct and indirect fire.

"We Americans have been tinkering with old jalopies since we've been knee-high to a grasshopper," said Sgt. William Shields, instructor at the academy from the 21st AAA Battalion. Complicated machinery is a comparatively new thing to most of the ROK students. But they've adapted to the situation quickly."

While Kun is undergoing fire training, 18 of his fellow soldiers are studying the driving of the quad fifty. With two days of class work and ten days of field work the drivers cover maintenance, safety measures, adaptation to weather, and operation of the half track.

In the last three days of the course, drivers and artillerymen combine their newly acquired skills on the Eighth Army firing ranges. The coordinated team has an opportunity to simulate actual battle conditions.

The difficulty of instructing Korean soldiers who know little English is lessened by stressing the application aspect of training.

In the first days of the school when there was a shortage of interpreters, American instructors had the double task of teaching the 50 cal machine gun and the English names of the parts.

"This is a bolt," said Sgt. James Brazzell, instructor at the academy from the 21st AAA Battalion, as he held up the part to the class.

"This is a bolt," repeated the ROK soldiers.

"OK, now what is the name of it?" asked the instructor.

"OK, now what is the name of it?" repeated the ROK soldiers innocently.

Despite language difficulties the ROK soldiers are learning the most recent developments in ack ack fighting. Soldiers graduating from the academy will be the backbone of the ROK army air defense. Increased antiaircraft artillery will be one of the last steps in making the ROK divisions self supporting.

3rd AAA AW BATTALION (SP)

By LIEUT. COL. O. A. MOOMAW

The 3rd AAA continues to function in Korea in spite of a severe winter; much snow, sleet and rain and then the spring thaw. In order to save the roads from complete destruction and conserve fuel, the 8th Army instituted a policy of requiring a Field Grade Officer to authenticate all vehicle trip tickets. On a few of the worst days only the regimental, battalion or separate company commanders could authorize a trip; and these had to be of an emergency

nature. This program proved to be very beneficial; not only did it save the roads and gasoline but most of the vehicles in the second and third echelon shops came off of deadline due to less usage, less accidents and less demand on the limited stock of parts always present in Korea.

On March 6th the second annual AAA target practice was completed at the Inchon Firing Range. Much benefit was derived from this training even

though the Battalion dropped 112 EM below authorized strength by the end of the training. Only four men per squad could be sent for firing as the tactical mission within the Division had first priority. Plans are under way for the third practice which is to commence about May 1st.

During January, 1st Lt. Joseph W. Hunt, Battery D, was promoted to Captain, awarded the Bronze Star for Meritorious Service and just six days prior

to time for normal rotation he became a non-battle casualty in a jeep accident, suffering a broken leg. Battery C rejoined the Battalion after supporting the 9th ROK Division on the Central Front more than two months.

In February Captain George Forstot departed for the U. S. where he was separated from the service. He was awarded the Commendation Ribbon for service in Korea. Battery B, known as "Battling Baker," was taken over by 1st Lt. John Mattas, former Battalion S1. (In April he was promoted to Captain.) Captain Adam Collins joined the Battalion early in February from Fort Bliss and is now Battalion S1.

During March approximately 65 EM were rotated to the ZI. March also saw the departure of six captains, one lieutenant and one warrant officer. Captains Baker, Btry C; Dittrich, Btry A and Barrentine, Hq. Btry, departed on FECOM transfer as well as Mr. Nissblatt, Btry B. Captain Snyder, Battalion Track Vehicle Maintenance Officer, and Lt. Allen, LNO, departed for the ZI for separation from the service. Captain Cheney, Air Observer for the 6147 Tactical Air Control Group (Mosquito Observer), departed for reassignment in the ZI. Captain Charles Thorpe, Battalion Communications Officer, volunteered for Air Observer duty and was transferred to Light Air Section, 3rd Infantry Division Artillery.

During April approximately 127 EM, one officer and one warrant officer will be rotated. The officer is Lt. Lawlor, Btry C, who is leaving the service. Mr.

Poole, who is being rotated to the ZI for reassignment, is also assigned to Btry C.

Major Spalding has returned to the Battalion for duty as S3, after being absent four months on TDY with 3rd Infantry Division as Commandant, NCO Academy. Captain Jack Young, former S3, is now Battalion Track Vehicle Maintenance Officer. Two recent arrivals, Captains Werner and Bergeron, are assigned as S2 and LNO respectively. Lt. Ellis is serving as Battalion Communications Officer, arriving in March from Camp Stewart, Ga.

The Battalion is continuing its mission of close support of the Regiments on the MLR, AAA Defense of the Artillery and Division Installations. Also logistical support is being rendered to the 15th Infantry in the form of three Armored Utility Vehicles for hauling supplies and personnel to and from the outposts. Two sector weapons, 90mm guns, are being manned by personnel from Batteries C and D, with Lt. Kruse in charge of the platoon—designated by the Battalion as BATTERY X-RAY. The men enjoy this assignment very much as it gives them some opportunity to utilize field artillery methods of firing.

At the present time the emphasis of training is being directed to air defense in the entire division. Utilization of single 50 Cal. MGs on ring and M63 ground mounts is being stressed. Aircraft recognition training is receiving attention also. Maintenance of vehicles and weapons continues to absorb most of our efforts.

3D AAA AW BN (SP) AWARDS

BRONZE STAR (V)

Corporal Robert E. Wilson
Corporal Ralph Gilley

BRONZE STAR (M)

Captain Lawrence E. Snyder
2nd Lt. David C. Williams
Captain Joe W. Hunt
1st Lt. James E. Knox
Captain Robert D. Baker
Captain Frank Dittrich
SFC Estal Brewer
SFC Leon H. McGurk
M/Sgt Frank Wambeke
PFC Harold A. Zerbock
Sgt Ryan L. Enicke
M/Sgt Eugene Muro

BRONZE STAR

WOJG Charles E. Poole

PURPLE HEART

PFC Robert L. Honn
PVT-2 Ollie F. Travis

COMMENDATION RIBBON w/Metal Pendant

Captain George Forstot
Corporal Ernest Q. Smith, Jr.
Corporal Jake Chavez
M/Sgt Richard F. Kirby
Corporal Carroll C. Coates

AIR MEDAL w/1st Oak Leaf Cluster and 2nd Oak Leaf Cluster;

DISTINGUISHED FLYING CROSS
w/1st Oak Leaf Cluster
Captain John P. Cheney, Jr.

21st AAA AW BN (SP)

LT. COL. D. B. WILLIAMS, Commanding

Major Paul Krofchik, former Battalion S3, departed on an inter-theatre assignment to the Safety Advisory Group in Japan on 12 February 1953. He has been replaced by Major Allen W. Chavez, who recently arrived in Korea from Ft. Sheridan, Illinois.

Major Herbert F. Tenwinkel departed on an inter-theatre transfer to the 40th AAA Brigade on April 18th. His replacement as Executive of this Battalion is Major Ralph E. Deems, a recent arrival in Korea from Army Field Forces at Fort Monroe, Virginia.

In addition to the above losses the

Battalion S4, Captain Edward C. Maxwell, the Commanding Officer of B Battery, Captain Elmer Wilkins, the Commanding Officer of C Battery, Captain Robert Gaillard, all rotated to the states during March 1953.

As a result of these losses Captain Richard C. Cochran, formerly commanding D Battery, has taken over as S4. 1st Lt. William Martin has been assigned as Commanding Officer of D Battery, Capt. Herman Marks as Commanding Officer of B Battery and 1st Lt. Chris W. Stevens designated to command C Battery. Captain Francis G.

Quigley continues to command A Battery.

In addition to its normal missions of antiaircraft and infantry support, the battalion has been assigned an additional mission of training antiaircraft crews for the Republic of Korea divisions. We will try to get you some pictures and a brief story on this training by the 1st of May, and we will also continue to work on additional articles on tactics and technique which would be of interest to AAA men and submit them to you as completed.

THE NEW MILITARY CHIEFS



U.S. Navy Photo
Admiral Arthur W. Radford

Admiral Arthur William Radford Chairman, Joint Chiefs of Staff

Admiral Radford has been identified for forty-one of his fifty-seven years with the United States Navy; a proponent of Navy aviation for thirty-three years.

He was born in Chicago, Feb. 27, 1896, and appointed to the United States Naval Academy in 1912 from Grinnell, Iowa.

After his graduation from Annapolis in 1916, it took him not quite four years to find his way to the Naval Air Station at Pensacola, Fla., to begin flight training. He has been a Naval airman in the general sense ever since.

In 1921 he came to Washington for a tour of duty in the newly established Navy Bureau of Aeronautics, and followed that up later in duty at sea with the aviation units of the *Aroostook*, the *Colorado* and the *Pennsylvania*.

In 1929 he took charge of the detach-

ment that conducted an aviation expedition over Alaska, to investigate thousands of miles of forest and mineral resources.

At the outbreak of World War II he was Director of Aviation Training of the Bureau of Aeronautics.

In 1943 he went to the Pacific where he won two Distinguished Service Medals as commander of fast carrier task groups under Admirals Halsey and Spruance.

In 1945, he was ordered to duty as Commander Fleet Air at Seattle, Wash. He became the Vice Chief of Naval Operations in 1948. In April 1949, President Truman made him Commander in Chief of the Pacific Fleet and High Commissioner of the Trust Territory of the Pacific Islands.

General Matthew Bunker Ridgway Army Chief of Staff

General Ridgway was born March 3, 1895, at Fort Monroe, Va., the son of Col. Thomas Ridgway, Coast Artillery Corps. Graduated from the United States Military Academy in 1917 and assigned to the Infantry.

At the time of Pearl Harbor he was assigned to the War Department General Staff. In March, 1942, he was designated assistant commander of the 82nd Airborne Division; later became commander and took the division to North Africa where he planned and executed our first large-scale airborne assault—the attack on Sicily.

General Ridgway led the 82nd during the early phases of the Italian Cam-



U.S. Army Photo
General Matthew B. Ridgway

paign, and in June, 1944, he parachuted with the leading elements of his division into Normandy where he played a major role in the invasion of Western France. In August, 1944, he took command of the XVIII Airborne Corps to direct its operations in the Ardennes Campaign and on through Germany in the advance to junction with Russian forces on the Baltic on May 2, 1945.

Since the war he has had a series of top level jobs leading to the assignment as Deputy Chief of Staff for Administration, the position he gave up in December, 1950, to take command of the Eighth Army in Korea.

Succeeding General MacArthur a few months later, General Ridgway's record as United Nations Commander in the Far East and Supreme Commander for the Allied Powers in Japan, and finally as the Supreme Commander, Allied Powers, Europe, is well known.



U.S. Air Force Photo
General Nathan F. Twining
Air Force Chief of Staff



U.S. Navy Photo
Admiral Robert B. Carney
Chief of Naval Operations



U.S. Army Photo
General Alfred M. Gruenther
Supreme Allied Commander, Europe

THE DEFENSE OF EUROPE

Status of the North Atlantic Treaty Organization Today*

By **GENERAL ALFRED M. GRUENTHER**

IT is a sad commentary on the state of the world that the defense of Europe should be an appropriate subject for discussion nearly eight years after V-E Day. Unfortunately, however, the strains are such that the success of this defense project may well determine the fate of Western civilization.

To meet the threat of Soviet Communism, twelve nations of the free world formed the North Atlantic Treaty Organization, commonly referred to as NATO, on April 4, 1949. Last year Greece and Turkey joined NATO, so there are now fourteen member nations.

Top Political Body

The top political body of the organization is the North Atlantic Council, which meets in continuous session at Paris. The U. S. representative is Ambassador Draper. Two or three times a year the ministers of the member nations meet in formal sessions in Paris.

The Standing Group, consisting of representatives of France, the United Kingdom, and the United States, is the supreme military authority. It meets regularly in Washington. Gen. Omar N. Bradley is the U. S. member. Under the Standing Group there are several military commands. The one with which I am connected is called Supreme Headquarters, Allied Powers, Europe, usually referred to as SHAPE. That headquarters was activated by General Eisenhower on April 2, 1951, and it is now commanded by Gen. Matthew B. Ridgway.

General Ridgway's mission is to defend Europe. His area extends from the

"Within the last three years the forces available to NATO have practically doubled in size . . . the effectiveness of the existing forces has been substantially increased."

northern tip of Norway to the eastern border of Turkey, a distance of some four thousand miles. To facilitate defense planning, his area is organized into major commands as follows:

Four Major Commands

1. The Northern Command, with headquarters at Oslo, Norway, is under a British Admiral, Admiral Brind. He has a unified command with army, navy, and air forces under him.

2. The Central Command has its headquarters at Fontainebleau, France, about thirty miles from Paris. For that area General Ridgway himself is in command with the land command being under Marshal Juin, a French officer, the air forces under U. S. Gen. Lauris Norstad, and the naval forces under Admiral Jaujard of the French Navy.

3. The headquarters for the Southern sector is at Naples. That area includes Italy, Greece, and Turkey, and is under U. S. Admiral Carney. He has under him land, air, and naval forces.

4. For the Mediterranean area the headquarters is at Malta, and the Mediterranean command is under British Admiral Mountbatten. So much for the command setup.

Coordinated Plan

Now, how are we doing? One of General Eisenhower's first tasks was to prepare a coordinated defense plan to meet any emergency. I am pleased to tell you that that plan has now been completed, and every commander in General Ridgway's area extending from the north of Norway out to the Caucasus knows exactly what he would do if an emergency should develop today.

This does not mean that the forces to implement the emergency defense plan are adequate. I regret to tell you that if the Soviets should execute an

attack utilizing their full capabilities, General Ridgway probably does not have forces adequate to meet it.

Better Off Today

We are, however, instantly better off than we were two years ago when General Eisenhower started out. Furthermore, there are NATO plans for the increase of these forces, and if NATO is able to continue the upward trend—and I am sure it will—we shall reach a position where it will be extremely unprofitable for an aggressor to attack us.

General Ridgway therefore considers that his fundamental mission is to preserve the peace by making an attack of aggression extremely expensive to an aggressor.

From time to time Soviet Propaganda announces to the people of the captive nations and to the world that NATO's intent is an aggressive one. I can assure you that during the two years that SHAPE has been in existence there has never been a single sentence written which involves an aggressive war plan. Our plans are defensive and based entirely on the assumption that the enemy takes the first aggressive move.

Instant Retaliation

I can tell you, however, that if an enemy does take that first step our plans are based on instant retaliation to the extent that our capabilities permit, and I can also assure you that those capabilities are constantly increasing.

The Soviets now have approximately four million men under arms, organized into 175 land divisions—the most powerful land force in the world—some 20,000 operational aircraft, and a very powerful submarine fleet. SHAPE plans are based on a consideration of the capabilities which that force could execute if the decision were given by the men of the

*Courtesy *Ordnance*, May-June, 1953.

This is the text of an address by Gen. Alfred M. Gruenther, U. S. Army, Chief of Staff, Supreme Headquarters, Allied Powers, Europe, delivered before the members of the Michigan Post, American Ordnance Association, at their spring meeting in Detroit, March 18, 1953.

Kremlin.

I do not say that such a decision is going to be made. That involves an estimate of enemy intentions, and that determination is a matter which lies within the field of governments.

Estimate of Forces

General Ridgway has presented to the North Atlantic Council an estimate of the forces which are considered necessary effectively to meet such a threat if it should develop, and the North Atlantic Treaty nations are now in the process of building their forces to reach this goal.

Within the last three years the forces available to NATO have practically doubled in size. In addition, the effectiveness of the existing forces has been substantially increased. Within the NATO countries the military budgets have more than doubled during this period of time. Moreover, the conscription in many of the countries has been increased. In other words, the North Atlantic Treaty nations have made considerable progress.

Above all, the concept of collective security has been accepted without question. No longer is there any feeling that any one nation, whether it be the United States or little Luxemburg, can provide an effective defense system by its own means.

What are some of our problems? First of all, as I have indicated previously, our forces still are not adequate. Air power is the dominating factor in military planning today, and the creation of air forces is therefore of top priority.

Next we have the question of building up satisfactory reserve forces. General Ridgway's strategy is based on the minimum number of active forces and the creation of the maximum number of reserve forces which can be mobilized on an instant's notice and which can fight effectively within a very few days.

The creation of effective reserve forces is one of General Ridgway's major problems. It means that men who belong to reserve organizations will have to spend a certain amount of time—say from three to four weeks—each year in military training. That, of course, involves time away from their normal pursuits and presents a major economic problem for each of the member countries.

"The United States of America is now the unquestioned leader in the world, and our associated countries in NATO, as they go forth to work out a collective defense system, are looking to the United States for guidance and support."

Burning Question

As you know, the question of German participation in the defense of Europe is now a burning question. Six of the European countries, France, Belgium, The Netherlands, Luxemburg, Italy, and West Germany, have prepared the framework of a European Army which will permit of German participation.

That treaty, known as the European Defense Community Treaty, is now before the six parliaments for ratification. There are reasonable expectations that it will be passed by the six countries within the next several months.

From the military point of view, that project is an extremely important one, because the availability of German forces will permit the creation of a shield in central Europe which will enable us to mobilize our reserves while the active forces meet the initial onslaught. Obviously, the German forces are very well placed to perform that mission.

Of course it cannot be overlooked that the participation by Germany in the European Defense Community creates many political problems, and those are now being considered by the various parliaments.

Another major problem is that some of the North Atlantic Treaty areas are engaging in conflicts in other parts of the world—the United States in Korea, the British in Malaya, and the French in Indo-China.

The French Campaign

The French effort in Indo-China is, in my opinion, improperly understood in the United States. One-third of the French military budget is now going for the Indo-China conflict, which has been going on since 1946. Each year the French West Point, Saint-Cyr, loses approximately one of its graduating classes in the Indo-China struggle. The over-all casualties have been very heavy.

The resulting stalemate in that area has been a tremendous drain on France,

and it makes the creation of adequate French forces in Europe a difficult one.

I would say that perhaps our major NATO problem is the maintenance of a sound economy. It will profit very little if, in building up a defense force, the economies of the NATO nations are wrecked. Perhaps our biggest asset in that field is the economic potential of the United States.

The North Atlantic Council is now engaged in a serious study to determine what portion of the national assets can be diverted for defense purposes. General Ridgway has stressed to all officers at SHAPE the absolute necessity of making the requirements for SHAPE forces the minimum ones which will accomplish the mission, because he recognizes the significance of economic strains.

What Can A.O.A. Do?

The question arises as to what part members of the American Ordnance Association and similar groups have in this project. First of all, I think we should make it unmistakably clear that the struggle which exists in the world today is basically a struggle to overthrow the very system which you gentlemen of the A.O.A. have done so much to create—a system of free enterprise with coöperation between management and labor. A free bargaining system is anathema to the Communist system.

We now have before us a challenge as to whether the free-enterprise system, with its emphasis upon the dignity of the human individual, is going to be able to exist in the type of world in which we live.

You gentlemen have proved without question your excellence in the field of production. As a result the United States has attained a position of power which is unparalleled in history. It carries with it, however, very grave responsibilities.

The United States of America is now the unquestioned leader in the world, and our associated countries in NATO, as they go forth to work out a collective defense system, are looking to the United States for guidance and support.

Military Aid Programs

You have had the evidence of this support in our Military Aid Programs. The Military Aid Programs are furnish-

ing equipment which is arriving in increasing quantities now. Without it there would be nothing more than a shambles in the defense structure which is being set up.

The question is going to arise as to the length of time that such aid can continue and the economic burden which the United States can bear.

In addition to the financial side, there is very definitely the spiritual side, too. We are working in a collective-security system for each one of the fourteen nations represented in the North Atlantic Council. Each one of these is a sovereign power with rights, sensitivities, and internal political problems. We have the job of leadership in this group to the end that an effective collective defense system be established.

As you look at NATO and consider that there are fourteen sovereign nations represented, you could say that such an organization cannot possibly work. I think I could prove to you, mathematically, that it cannot work. At the same time, I can prove to you that, for the sake of civilization, it *must* work.

If this effort fails, we deserve to go down in the chaos which will surely ensue. I am not pessimistic on this matter, but I do say that the first two years, in my opinion, will prove to have been the easiest two years.

Great Danger

Our great danger is that we may be tempted to divide among ourselves. Stalin in his speech before the Soviet Con-

gress last October stated that. He also stated that his hope was that the Western nations, by reason of commercial rivalries, would so disintegrate that the Soviet Union would be able to walk in and take over.

The only element where the Soviets have an advantage over us of the West is in the field of unity. They get that unity by the gun-in-the-back method. We have to get it by the intricate and the very difficult method of cooperative negotiation.

Someone has referred to NATO as an administrative monstrosity. I could say that you could probably prove a pretty good case that it is a cumbersome organization.

Great Britain, as you know, for a hundred years was the leader of the free world. And throughout the British population, and especially throughout the British school system, practically every man was taught the responsibilities of Great Britain in its rôle of world leadership. For our defensive alliance to succeed I am convinced that we are going to have to do the same thing.

Spiritual Leadership

It is not enough to be having an excellent production line. The production problem part is on the way to solution, but the moral and spiritual leadership, the understanding of these nations, is still a problem that challenges our best efforts. I can think of no better organization in the whole world to assist than the American Ordnance Association.

You realize that we are confronted now with a new peace organization for collective security, the implementation of which presents many difficulties that must be resolved.

The first question that always comes up is, "Are our allies doing their part?" And you can prove, I am sure, that the allies are not doing their part. It is also possible that they may be able to prove that we are not doing our part.

Detroit and our other great American production centers are being defended from an area 3,000 miles away. We cannot defend Detroit from Selfridge Field. It is being defended in Western Europe. NATO, in the final analysis, is your defense and your problem. It is up to us as United States citizens to see that this organization works.

What I am pleading for is a greater understanding, a greater interest, on the part of the American public in this very important problem. I am not asking you to rubber-stamp what we are doing. We welcome criticism. The one thing we cannot survive is indifference.

Obligation Discharged

We have discharged the obligation which General Eisenhower has imposed on us. The four hundred and six officers who are in our headquarters now, and a corresponding number in the subordinate headquarters, are dedicated to this purpose. They will devote the rest of their lives to it because in it is the sole hope of preserving peace.

The HISTORY OF THE FRENCH FIRST ARMY

With a preface by Gen. Eisenhower and an appreciation by Liddell Hart, Marshal de Lattre covers the war from December 1943 through to its conclusion. In his treatment of international controversies de Lattre adds stature to his book and himself with his restraint and dignity. He was an artist in warfare, but one with iron will and fierce driving power. He had deeply engrained faults, as he knew himself, but high military virtues. The story told by the commander of the French First Army is a notable one little known as yet in this country.

by Marshal de Lattre de Tassigny

\$9.50

AN APPLICATION OF SIMPLIFIED WIND DETERMINATION

By MAJOR HARRY R. JACKSON and CPL. J. G. TORIAN

Gunnery Department, AA & GM Branch, The Artillery School

BEFORE presenting a procedure for the application of the simplified determination of ballistic wind data as outlined in the article *Simplified Wind Determination* (Nov-Dec 1952 AA JOURNAL), it is worthwhile to consider the reasons for proposing the use of such a method.

Actually complete simplicity of method can only be achieved at the sacrifice of accuracy and validity; in fact a blind search for simplicity might completely nullify whatever progress has been made since 1944 in improving artillery ballistic meteorological technique. This progress has been considerable in terms of improved instrumentation and scientific technique as far as obtaining the raw upper air data is concerned. It must be admitted that, like so many fields in the military profession today, artillery ballistic meteorology is a specialist field. For this reason Army Field Forces established several years ago an adequate service school program to train the necessary specialist personnel. Units in the field are now being issued the latest developments in electronic meteorological matériel including radiosonde equipment and the new Rawin Set AN/GMD 1-A. Latest revision of TO & E's provides excellent meteorological support for all gun units.

While all of this may be undisputed fact, nevertheless, many units in the field and in training do not have access to valid met support. In attempting to solve the problem locally, they can turn only to the pertinent technical manuals for help and are immediately stymied by the apparent complexity of the prescribed procedure.

Making the sounding, or the upper air observations, is quite simple and straightforward. It is the application of weighting factors and the plotting of ballistic wind vectors which seem to mystify and frustrate the average artilleryman.

It was this problem which motivated the current articles on simplified wind determination. This method is recommended as a short term solution for units which do not have sufficient school trained meteorological personnel available.

Used in conjunction with the newly issued Rawin Set AN/GMD 1-A, this method may provide accurate data comparable to that of the present standard method outlined in TM 20-240, but this must be verified by valid comparison tests. Therefore it is important to keep in mind that at the present time this simplified method is only a short term solution. It should not be considered a substitute for the proven method outlined in TM 20-240.

An empirical analysis of the method (Nov-Dec 1952 AA JOURNAL) indicates an adequate approximation of the weighting factors of the standard procedure. Preliminary comparative statistical test data supports this fact. However, it should be pointed out that the accuracy of the ballistic data of either method depends upon the initial accuracy of the raw data. In other words, it cannot be expected that the ballistic data computed by means of the simplified method based upon visual flight observations will be as accurate as ballistic data computed by means of the present standard plotting method based upon electronic flight data.

Outlined below is the procedure for applying this simplified method of determining ballistic wind data to the present methods of gathering raw data.

Gathering Raw Data

THE method of obtaining wind data will depend upon the equipment available to the meteorological section. Although combinations with some of the latest equipment make as many as five or six methods available to a completely

equipped section it will suffice here that the two general methods, the visual and the electronic, be explained with application to this new wind determination system. The remainder of the methods are merely variations of these two methods. It will be assumed in the following that the reader is familiar with the visual and electronic procedures presently in use. Although this is not necessary we refer you to TM 20-240 (November 1950).

In the visual method the equipment required is that for the standard visual method, a 30-gram or 100-gram balloon of suitable color, a theodolite, a timer or stop watch, a polyphase slide rule, and communication equipment. The balloon is prepared and carefully weighted as prescribed in TM 20-240 (November 1950). The ballistic wind data is computed directly from the theodolite readings on the flight of the balloon taken at the calculated time the balloon reaches the various representative altitudes of the zones. Figure I presents a table of the calculated time of arrival at the various representative altitudes to the nearest 6 seconds (1/10 minute) for message type 2.

In the electronic method (here is meant the tracking of a balloon-borne radiosonde with a theodolite) the proper balloon and radiosonde are set up in the manner prescribed by TM 20-240 (Nov 1950) for such flights. From release elevation and azimuth, readings are taken at intervals of one (1) minute on the balloon. The time-altitude curve is plotted on the Baroswitch Evaluation Chart ML 346/TM as prescribed in TM 20-240 (Nov '50). The time at which the transmitter reaches each required representative altitude (Fig. 1) is determined by reading across the Baroswitch Evaluation Chart to the junction of the time-altitude curve and the desired altitude. By interpolation to the nearest 1/10 of a minute from the

ZONE	ALT. OF ZONE LIMIT	REP. ALT.	TIME OF ARRIVAL	
			30-GM	100-GM
1	200 Yds	200	1.0 Min	0.5 Min
2	500 Yds	500	2.2	1.3
3	1000 Yds	830	3.7	2.2
4	1500 Yds	1250	5.8	3.3
5	2000 Yds	1670	7.3	4.4
6	3000 Yds	2500	12.0	6.5
7	4000 Yds	3330	16.1	9.1
8	5000 Yds	4160	20.0	11.6
9	6000 Yds	5000	24.5	14.0
10	8000 Yds	6660	33.0	19.4
11	10000 Yds	8330	41.2	24.7

1-minute interval recordings the corresponding elevation and azimuth angles are computed for the various representative altitudes.

Computing the Ballistic Data

THROUGHOUT the development of this simplified procedure there have been many suggestions made as to methods of computing the ballistic data. Among these are a computer designed by Colonel Harris and described in his article, a set of horizontal tables as presently used, and a series of graphs and charts as used in the old simplified procedure. However, most of these methods have their shortcomings in the fact that the facilities for construction are not within the average firing unit. With the exception of Colonel Harris' computer most of them do not present a wide enough range of application to be used in conjunction with *all* of the latest available equipment. Although with modifications Colonel Harris' computer is the ultimate solution, for the present, our goal can best be reached by employing the conventional polyphase slide rule (ML-59) to compute the ballistic wind speed and a set of back azimuth tables in the TM 20-241 to compute the ballistic wind direction. The remainder of the article will be on the employment of these already available facilities.

There are various methods of gathering raw data for the computation of ballistic data. However, the object of any of the methods is to obtain the four necessary arguments for the computation. They are the representative altitude (H) (fixed for the zone in question), the time (t) at which the balloon reaches this altitude (fixed for visual

flights), the elevation (ϕ) and azimuth (θ) readings to the balloon from the release point at the time t. These arguments are employed in the computation by the following formulae. (See Editor's Note.)

$$W = .0341 \frac{H \cot \phi}{t}$$

Where W = ballistic wind speed in M.P.H.; H = altitude in yards; and t = time in minutes since balloon release.

Ballistic wind azimuth is the back azimuth of θ in mils.

Computing the Ballistic Wind Velocity using the Conventional Polyphase Slide Rule, ML-59

The twenty inch slide rule ML-59 is a component part of met station set AN/TMQ-4. Three scales are required in the computation; they are the C scale, the D scale, and the T scale (on the rear of movable scale).

It is assumed that the reader is familiar with the C and D scales, their reading, and their operation in the process of multiplication and division. However, the T scale and its use may be new to some and requires a brief explanation.

How to read the T Scale

The purpose of the T Scale is to obtain the Tangent and Cotangents of the various angles. (Although an understanding of these functions is not necessary for either the reading of the Scale or the computing procedure being outlined.) The Scale is graduated from a little less than 6° to 45° in degrees and minutes. (60 min to a degree.) Up to 20° the 1° intervals are subdivided into 2 min intervals with distinguishing marks at each 10 min interval and at the

30' (half a degree) interval. From 20 to 45° the smallest interval is 5 min. Those angles above 45° will be explained in the procedure.

Procedure

The procedure involved in the computation, for simplicity, must be divided into 2 cases; those cases in which the elevation angle is greater than 45° and those in which the elevation angle is less than 45°.

CASE I. Where elevation angle is below 45°.

Given: ϕ , the elevation angle; H, the representative altitude in yards of the zone in question; t, the time in minutes.

Step 1: Set the angle ϕ on the T scale under the stationary hairline located on the right end of the back side of the rule. (This represents the $\cot \phi$ on the D scale.)

Step 2: Place the moveable hairline over the value of H on the C scale. (A change of indices may be necessary as in any multiplication process.)

Step 3: Move the C scale until the time t is under the hairline.

Step 4: Move the hairline to the value 341 on the C scale.

Step 5: Read the ballistic wind speed on the D scale under the hairline.

CASE II. Where elevation angle ϕ is greater than 45°.

Given: ϕ , the elevation angle; H, the representative altitude of the zone in question; t the time.

Step 1: Set 90°— ϕ (the complementary angle) on the T scale under the stationary hairline on the right end of the back side of the rule. The $\cot \phi$ is now presented on the C scale above the right hand index of the D scale.

Step 2: Place this value ($\cot \phi$) on the D scale by moving the hairline to the value of $\cot \phi$ on the D scale.

Step 3: Place the left hand index of the C scale under the hairline.

Step 4: Move the hairline to the value of H on the C scale. (A change of indices may be necessary as in any multiplication process.)

Step 5: Move the C scale until the time t appears under the hairline.

Step 6: Move the hairline to the value 341.

Step 7: Read the ballistic wind speed on the D scale under the hairline.

Computing the Ballistic Wind Direction

Given: θ in degrees the azimuth angle observed at the representative altitude.

By the use of the table Va (pg 205) of TM 20-241, *Meteorological Tables for Artillery* convert "azimuth to balloon, degrees" to "Wind direction mils."

Example

CASE I. Computation of the Ballistic Wind data for Zone 5 in which the raw data presents $H = 1670$; $\phi = 37^\circ$; $\theta = 97.2^\circ$; $t = 3:18$ or 3.30 min.

Ballistic Wind Speed Computation

Step 1: Set 37 on the T scale under the stationary hairline on the right end of the back of the rule.

Step 2: Move the hairline to 167 on the C scale.

Step 3: Move the C scale until the value 33 is under the hairline.

Step 4: Move the hairline to 341 on the C scale.

Step 5: Read the Ballistic Wind Speed 23 m.p.m. (22.9) on the D scale under the hairline.

Ballistic Direction Computation

From Table Va in TM 20-241, θ , 97.2 is between 92.9 and 98.4, corresponding to 4900 mils or a Ballistic Direction of 49.

CASE II. Computation of the Ballistic Wind data for Zone 5 in which the raw data presents $H = 1670$; $\phi = 64$; $\theta = 218.6$; $t = 3:12$ or 3.20 min.

Ballistic Wind Speed Computation

Step 1: Set $90^\circ - 64^\circ$ or 26° on the T scale under the stationary hairline on the right end of the back of the rule. Read 488 on the C scale over the right hand index of the D scale.

Step 2: Place the hairline over 488 on the D scale.

Step 3: Place the left hand index on the C scale under the hairline.

Step 4: Move the hairline to 167 on the C scale.

Step 5: Move the C scale until 32 on the C scale is under the hairline.

Step 6: Move the hairline to 341 on the C scale.

Step 7: Read the Ballistic Wind Speed of 9 m.p.m. (8.68) under the hairline on the D scale.

Ballistic Direction Computation

From Table Va in TM 20-241, θ , 218.6 appears between 216.6 and 222.1, corresponding to 0700 mils or a Ballistic Direction of 07.

Although the detailed solution has been given here for the slide rule ML-59 the Ballistic Wind Velocity Equation can be solved using any slide rule equipped with a T scale.

Final Caution

Remember that in the foregoing simplified method the data used to determine the ballistic wind data for any standard altitude are the H , t , ϕ , and θ for the representative altitude (83.3% of standard altitude).

EDITOR'S NOTE. In the November-December 1952 JOURNAL the authors analyzed the antiaircraft ballistic wind weighting factor system and pointed out that in normal wind conditions the ballistic weighted wind speed and direction

to any given standard altitude is very closely equal to the *average* wind speed and direction up to a representative altitude of 83.3 per cent of the standard altitude.

Accordingly, in the method presented herein the *average* wind data for the representative altitude is computed and used as the ballistic wind for the given standard altitude.

The formula used in computing the average wind speed can be derived simply. When the balloon has reached any given altitude: let H = the balloon altitude in yards; R = horizontal range in yards; t = time in minutes since balloon release, and; ϕ = angle of elevation from point of release to balloon.

$$\cot \phi = \frac{R}{H}$$

$$R = H \cot \phi$$

$$\text{Wind Speed (yds per min.)} = \frac{R}{t}$$

$$= \frac{H}{t} \cot \phi$$

$$\text{Wind Speed (m.p.h.)} = \frac{R}{t} \frac{60}{1760} =$$

$$\frac{H \times 60 \cot \phi}{t \times 1760} = .0341 \frac{H \cot \phi}{t}$$

Ed.



U.S. Army Photo

SILVER STAR

PFC Gordon R. Mathias, Battery B, 60th AAA AW Bn, is awarded Silver Star for gallantry in action in Korea by Col. M. W. May, Jr., Commander 32nd AAA Brigade. Following special review by the 60th they confer with distinguished Swedish and British journalists who attended.

MENTAL SOP

By **BRIGADIER GENERAL STRODE NEWMAN**

82nd Airborne Division

IT is axiomatic that an SOP is not a substitute for thought. I believe, however, that everyone should have a *mental standing operating procedure*. Off-hand most people will at once say, "An SOP for thinking—ridiculous!" But I am sure it can be shown that an SOP for thinking is quite practicable and is, in actual fact, used by all logical thinkers.

We have specialized mental SOPs in the Army for certain types of situations—though we normally do not recognize this fact, nor do we call them standing operating procedures. Consider the special case of the five paragraph order, which is an SOP with two primary purposes:

(1) To insure that orders are complete, by *thinking them through* in the same sequence each time.

(2) To facilitate reading and understanding orders.

Experience shows that often a man of average mentality will—by using this orderly thought process—produce a more complete and practical order than his more brilliant contemporary who has a facile but erratic thought process.

The purpose of a standardized method (or SOP) for estimating the situation is similar to that of the five paragraph order.

The method (or SOP) for searching an area from an observation post is to divide the area into segments, then search one segment at a time in a logical sequence. While a man with poor eyesight may not achieve as good results as a man with good eyesight, nevertheless a man of any given acuteness of vision will achieve the best results possible for him by employing this (or some similar) logically organized procedure.

Examining these three selected SOPs, it is readily seen they are founded upon the same basic principle:

For each given problem select a place to start and examine the problem systematically by proceeding through it in a consciously organized and logical fashion.

To illustrate, here is a problem with



U.S. Army Photo

Brigadier General A. Strode Newman graduated from the Military Academy in 1925 and was commissioned in the Infantry. Wearer of the DSC, a veteran paratrooper, and a well known contributor to the service journals, General Newman is now the Assistant Division Commander, 82nd Airborne Division.

a solution by Major Bristow, S3 of an infantry regiment in division reserve.

Lieutenant Colonel Mansfield, Division G3, phoned Major Bristow this warning order: "Div Atks at 0700 tomorrow 15 July. Your regiment moves to assembly area vicinity of FOXHOLE after dark tonight, closing prior to 0530 tomorrow. Officer messenger will bring you the Div FO by 1600 today."

"Yes, sir," Major Bristow said, and hung up.

He sat for a minute and allowed random thoughts related to the problem to flash through his mind. Then he glanced briefly at his map and noted the regiment must move approximately two miles to reach the village of FOXHOLE.

Again Major Bristow allowed the problem to come to him mentally, thoughts floating by in route step in any order.

"Lieut. Garrison," he called to his Asst. S3, "have the draftsman and typist ready for a regimental FO."

"About what time, sir?"

"I don't know yet. I'll let you know later."

Suddenly another thought arrived unbidden. Major Bristow seized it, walked over to Major Fox, the S4, and said:

"We move to an assembly area near FOXHOLE tonight, closing by 0530 tomorrow. You better have the trucks ready."

"I have trucks for only one battalion at a time. Where and when do you want them?"

"I don't know yet. I'll let you know later."

On another sudden thought Major Bristow hastened into the regimental commander, Colonel Hightower, and told him of the division order.

"Well," said Colonel Hightower, "what are you going to do?"

"I thought the Colonel would issue a field order."

"Hell, yes, I'll issue a field order—but what are you going to do in the meantime?"

"Sit down with paper and pencil and make notes of what you are going to do, the order in which you are going to do them . . . and then report back to me."

FORTUNATELY, the above occurred during maneuvers so that before the division entered combat Colonel Hightower had a new S3.

When Lieut. Col. Mansfield, Division G3, phoned a similar warning order to Major Wheeler, the new Regimental S3, there was a noticeable difference in how Major Wheeler went about things—though he probably did not realize he used a mental SOP.

After hanging up the phone Major Wheeler reached for a pencil and paper, looked at the map closely, and then leaned back in his chair to think. First he ran quickly through the problem mentally to be sure he understood just what he was getting ready to do.

His summary ran about like this:

It's now 1430.

Div order here via Ln 0 by 1600.

Regt order required—C.O. could dic-

tate by 1700.

Troops move after dark—probably by marching since distance short and we have few trucks.

Send someone to check route and assembly areas.

Notify other staff members.

Thing to do first is to tell C.O. of situation, and request decisions on which to base recommended plan.

Having written down a few notes, Major Wheeler went in to see Colonel Hightower.

"Colonel," he said, "Division telephoned this warning order," . . . and he transmitted the warning order.

"Shall I prepare for a regimental order about 1700?"

"Yes, I'll dictate the order, and you can confirm it in writing. Have the battalion commanders come in person."

"I recommend, sir, we move by marching, starting at 2000—dark will be at 1925. I can give you an oral plan for tonight's move in about twenty minutes."

"Yes, that's all right, Wheeler. And issue warning orders to that effect also."

Major Wheeler went back to his folding table and called in Lieut. Garrison, the Asst. S3, and Master Sergeant Alexander, his operations Sgt.

"Alexander," he said, "have your draftsman and stenographer ready at 1630 to put out a field order."

"Garrison, telephone the following warning order—write it down: *The regiment moves by marching to FOXHOLE tonight, beginning at 2000. Further details later. A regimental FO will be issued orally at Regt CP at 1700 today.*

"Have all units send representatives to receive it—battalion commanders to come in person. Also notify the staff."

MAJOR Wheeler then picked up his pencil and paper again. He now had his basic decisions and was ready to think the thing out in detail. So he selected as a starting point the time he received the order, and thought the problem through chronologically until the regiment closed in FOXHOLE.

Received Div warning O at 1430—informed C. O.

Div written FO due at 1600.

Decision is to move by marching.

Regt FO to be dictated at 1700.

Informed Alexander to get ready.

Garrison issuing warning order to unit commanders, and to Regt staff.

(These he checked off, because they had been taken care of. Now he started notes of things to do.)

Send Garrison to reconnoiter route and select unit assembly areas near FOXHOLE.

Have him take guides from all units. Determine order of march.

Select initial point, and figure time for each unit to clear.

See S4 re traffic control.

Get Sig O started laying wire.

Take Station List of units to C. O. with oral plan.

Check with S2 about Para 1a of FO.

Also that S4 and Sig O have recommendations ready for C. O.

Check distribution list.

Prepare Para 1b for C. O.—and suggestions for Para 3x.

Check preparations by Alexander for reproducing FO quickly.

Have Alexander set up map, folding chairs, boxes, etc to facilitate C. O.'s dictated FO.

At 1650 call roll of those present to receive FO.

Be prepared at 1700 with oral orders re initial point, time each unit will clear, etc as OK'd by C. O.—also any other instructions re move.

C. O. dictates FO at 1700.

Actively check reproduction and distribution.

If OK with C. O., take quick jeep ride out to see how Garrison is organized at FOXHOLE with guides.

If OK with C. O., take Sig O and Hq Comdt along to select CP site.

Suggest to C. O. possibility of Asst S3 staying forward with small Adv CP GP to facilitate control.

From these notes Major Wheeler outlined his plans to Colonel Hightower—and received his OKs, decisions, and additional instructions.

After adding to his check list to insure carrying out the C. O.'s desires, Major Wheeler rechecked all his plans:

Will anything conflict with anything else? (In this case the answer is maybe—check with Division to get clearance to use road for time desired.)

Where can things go wrong? (In this case decided it could be the Initial Point, at the turnoff on unimproved road, and in the guide system at FOXHOLE—so marked these to be double checked.)

He is now ready to carry out the plans, crossing off each item as it is completed.

To summarize and recapitulate:

A *mental standing operating procedure* is practicable, and in people of naturally logical minds is unconsciously followed by them. To others experience will gradually teach certain methods—but almost anyone who will deliberately give thought to organizing his thinking can soon evolve an orderly procedure to be consciously followed.

A suggested mental SOP procedure is:

- (1) *Think briefly through the problem—viewing it as a whole in your mind's eye, and fixing in your mind exactly what the problem is you are to solve.*
- (2) *Consult with others who may be concerned.*
- (3) *Select a starting point, and think through the problem step by step in some logical sequence.*
- (4) *Make brief notes—or a rough sketch—to clarify and solidify your thoughts.*
- (5) *Go back through your notes re-checking, looking for vague spots—and visualizing the progression of the physical action.*
- (6) *Briefly review the problem again mentally, balancing the problem against the solution to be sure the solution has fully solved the problem.*

The above may seem a very nebulous mental SOP, but then the subject of thought processes is a very intransigent thing in itself.

There is not, nor can there ever be a mechanical substitute for the magic processes of our brain which we call thinking, nor can any system be evolved which will increase the brain capacity of any given individual in the solution of any given problem. But there very definitely is a mental procedure through which an individual can insure getting the maximum thought results from the brain capacity with which he is endowed.

NOTIFY THE JOURNAL WHEN YOU CHANGE ADDRESS

IS IT LEVEL?

By CAPTAIN BENSON E. BRISTER

HOW many times have you heard, "Soldier, you are canting your piece"? It is not just the new recruit that is guilty of canting his piece either. Nearly every weapon in the Army is subject to the same error of being canted or not level. Machine guns have to be carefully checked to prevent canting, and heavy machine gun sections are issued a quadrant with which they can level the dial of base of the machine gun. A bazooka is not accurate at longer ranges mainly because of the cant of the piece. Mortars and artillery are especially affected by the smallest cant or being out of level. Canting the piece is one of the most important considerations in firing any Army weapon.

AAA guns are no exceptions. Not only does every gun have to be level in a complete circle (6400 mils), but the gun-laying radar parabola has to be level in a complete circle (6400 mils). Search radars, gun-laying radars, and missile-tracking radars all have to be perfectly level if they are to accomplish their mission.

A recruit with a few days training in preliminary marksmanship can tell you that if you cant the piece to the right the round will go to the right. This man will correct the error of canting the piece as he is coached and convinced of the importance of keeping it level. Long hard hours are spent in correcting the rifleman, and it takes even longer and harder training to correct the crews of antiaircraft weapons and fire control equipment. Of course the responsibility of having equipment level rests with the commanders, but the actual application of leveling falls to the platoon leaders and section sergeants. Quite often you may see commanders check one or two

guns but rarely will you see anyone check the level of the radar parabola. The radar is the eyes of the battery and if it is off-level 10 mils, the guns will be off that much also, even though the guns are level.

The big problem is to convince everyone concerned of the importance of leveling equipment and teach them how to do it quickly and efficiently.

Let's look at a AAA gun battery that has all guns perfectly level but the radar parabola is four mils out of level on one side. If a target is fired at while the parabola is in the center of the low side, the guns will be aiming four mils higher than they should because the radar has to look four mils higher to see the target and it sends that information to the computer and the computer sends it to the guns. If the target is at a range of 10,000 yards, the error in elevation will be 40 yards. If the target was fired at by this battery at any other azimuth, there would still be more than enough error to cause a miss because as the parabola moves away from the center of the low place, there is a cant of the parabola which causes erroneous data to be sent to the computer and guns.

With a command guidance system for a surface-to-air missile (SAM), the problem of level becomes so acute that the best of engineers will have a problem solving it. Also since it isn't practicable to have engineers and an excess of equipment in the battery, the delicate adjustments of leveling of equipment will have to be done by battery officers and technicians, using TO/E field equipment. A five mil error in level could cause a missile to miss a target 400 yards (1,200 feet at a range of 80,000 yards. Even a one mil error is far too much tolerance in guided missile SAM equipment; so, "soldier, don't cant that piece."

HOW can we solve the problem of leveling? With small arms we coach and practice; with the cal .30 heavy machine gun a quadrant may be used; with mortars (60 and 81mm) we cross-

level; with field artillery the trunnions are leveled when possible, but sights and quadrants are used to insure that the lay is level (not canted); with AAA SP weapons the vehicle is put into position so as to level the weapons; with 90mm and 120mm AAA and fire control equipment the problem of leveling becomes complicated unless the equipment is thoroughly and completely understood by the using personnel; a gunner's quadrant is used to level AAA guns in a complete circle; most radar parabolas are leveled by raising or lowering the four corners of the van or trailer until the parabola is level in a complete circle. This is complicated since the jacks work separately and when one jack is lowered or raised, the opposite jack must be lowered or raised the same amount or the other opposite jacks will hold all the weight and the van will rock. There is the problem of one side or corner settling, so a constant check of level must be made (especially in a new position).

The problem of leveling medium and heavy AAA guns seems complicated since there are three major components to be adjusted so that the gun will remain level in a complete circle. Actually it is a simple matter to level 90mm and 120mm AAA guns if the leveling mechanism is understood. The pedestal can be on level ground, or as much as a three degree slope and the upper carriage and gun can still be leveled.

It must be remembered that there is no cross-leveling mechanism for these guns. It is assumed that the trunnions are leveled on the upper carriage (this is done when the gun is assembled), so the job of leveling is simply to get the upper carriage level, and level the gun tube with the upper carriage. The proper sequence of leveling one of these guns is as follows:

1. Unlock jacks and rough-level (use vials on jacks).
2. Traverse gun tube over two opposite jacks. (Longitudinal axis of gun over two opposite jacks.)
3. Level gun tube with elevating

Captain Brister began his service with the Louisiana National Guard. With a taste of Marine Corps service aboard ship and a more strenuous workout with the Infantry in Europe in World War II, followed by AAA service in Korea with the 50th and 68th AAA Battalions, he is now writing training literature in the School at Fort Bliss.

hand crank (use gunner's quadrant).

4. Traverse gun tube 3200 mils.

5. Check level with quadrant.

6. If the gun tube is not level, correct *half* of the error with the elevating hand crank, and the other half with the jacks.

EXAMPLE: If there is a four mil error (that is, if the gun tube is four mils high), depress the gun tube two mils using the elevating hand crank, and depress the other two mils using the jacks.

7. Traverse the gun tube 1600 mils (over the other two opposite jacks) and *level by using the jacks only*. It must be remembered that the upper carriage and the gun tube have been leveled in two opposite directions, and are coordinated with each other. If the gun tube and upper carriage are not level in these other two opposite directions, it is just a matter of leveling *by using the jacks only*, which should cause the gun and upper carriage to be level in a complete circle.

These are the steps, in sequence, of how to level medium and heavy AAA guns. A constant check must be made,

in a complete circle, to insure that the gun is perfectly level.

IT will be noted that no mention was made of setting the elevation dial. This should not be done until the gun is level; then there will be less work and the setting will not be confused with the actual leveling of the gun.

If the gun is not level in a complete circle, after the steps outlined above, there has either been a human error, or the equipment has been damaged and cannot be leveled. However, it takes a lot to damage this heavy equipment, so in nearly every case it is the human error that causes the gun to be out of level. If there is confusion about the sequence, or an error has been made and the gun is not level at any azimuth, then the whole process should be repeated, starting with step 1.

A gun will not stay level until it is settled solidly on a good foundation with no roots, rocks, loose sand, or other conditions that may cause the gun to settle or shift. It is the author's opinion

that settling rounds should be fired at the lowest angle of elevation possible in order to cause the pedestal to dig its way into the ground and thus settle faster and more solidly.

In conclusion we can say that:

1. It is definitely a problem to every weapon in the Army to prevent cant (or keep the weapon level).

2. It would seem simpler to build cross-leveling mechanisms for weapons than to build sights that correct for errors.

3. More training is needed on all weapons concerning leveling.

4. On some weapons such as AAA medium and heavy guns, and guided missiles, the problem of level is so critical it may be necessary to use automatic leveling devices such as gyros or electronic-mechanical automatic leveling devices.

Until someone perfects an automatic leveling device, the problem of leveling is going to be with us, and the thing to remember in firing any weapon is, *don't cant that piece*.

DISTINCTIVE UNIT INSIGNIA

By CAPT. RUSSELL P. MAHON

Department of Nonresident Instruction, The AA & GM Branch, TAS

IN a previous article on distinctive unit insignia in the March-April 1953 issue of this JOURNAL, the history of distinctive markings, the development of heraldry as a science, certain heraldic laws, and the development of insignia and their adoption in the United States Army, were briefly covered.

Let us now see how a coat of arms might be evolved for a fictitious unit, the Steenth AAA Battalion.

As a background for the unit, let us assume that the battalion is a direct descendant of the Umpteenth Infantry regiment, which served in the Philippine Islands during the Philippine Insurrection, on the Mexican Border during 1916, in France during World War I, and overseas during World War II as an AAA outfit.

As stated in the first article of this

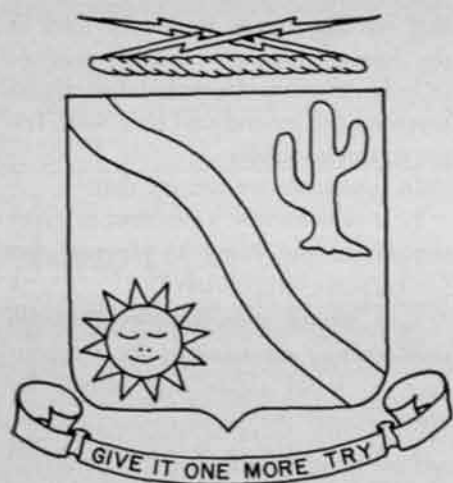
series, the coat of arms will be designed by the Heraldic Branch, Office of the Quartermaster General, based on the history and combat achievements of the unit. However, you, as a commander or member of the unit, may want to submit suggestions.

The shape of the coat of arms is of small concern, so we use any of the standard shapes that are seen in military heraldry. The background should be red, gules, to signify the branch, artillery.

Now, what can be used for charges or ordinaries? We peruse the unit history and find that in World War I the direct antecedent of this unit was an infantry regiment which was one of the units involved in the Battle of the Marne in France. Thus, we can put a wavy bend on the insignia and, at the same

time, we can depict the infantry background by making the bend blue.

Remember, a color is not put on a color, and here we are trying to put azure on gules. The heraldists have a way to get around that. It is called fimbriating and means an edging. So, if the blue bend is fimbriated with one of the metals such as gold (or) we can say we are not putting a color on a color. Now, we might desire to add a charge to the field. What does the unit history say? We see that the unit was stationed on the Mexican Border during the trouble there and, by looking around, we find that Mexican Border service is sometimes symbolized by a cactus. We may put it in the sinister chief point and, to keep from breaking the rules about colors, make the cactus green (or "proper," the natural color), and fimbriate it



Completed coat of arms.

Now we have arrived at the motto, the last thing to which we have to give some thought. Look hard in the history. Oho, what is this? What is the statement that Colonel Schmikes made when the outfit was trying to reduce the Moro stronghold in the Philippines and had been repulsed several times? Right on the field, in the midst of the jungle, with missiles falling all about him, he shouted "Let's give it one more try," and that time the attack was successful. So, there is our motto, hand-



in gold. Now we look at the history again and find that the unit served in the Philippines during the Philippine Insurrection. We find that the symbol commonly used for that service is a Kataipunan sun so we put it in dexter base point in gold, and here we need not fimbriate since gold is "or," a metal, and can be placed on a color without breaking a heraldic law.

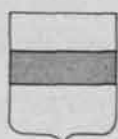
Now, let us consider what we want for the crest. In Greek mythology there is a story about one god who stole the sun god's chariot (the sun) and raced away with it. The sun god blasted him from the sky with a lightning bolt, the first recorded antiaircraft artillery action. Since the Steenth Battalion is AAA, let's use that story and adopt the lightning flash as our crest. To make it symmetrical, let it be crossed flashes, and let's make them gold to carry out the artillery colors of red and gold.

Now, the torse or twisted cloth on which the crest is set! There isn't much to worry about here, just make the twists gold and red (gules) alternately.

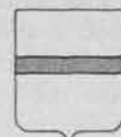
The remaining part of the coat of arms is the scroll. We can make that as fancy as we wish, and no one will object so we give it many folds.



THE CHIEF



THE FESS



THE BAR



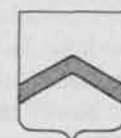
THE BEND



THE BEND
SINISTER



THE PALE



THE CHEVRON



THE PILE

Ordinaries commonly used in military shields.

picked and very brave-sounding. Now, our coat of arms is finished, and we have something like the illustration below.

One more phase of heraldry that might be interesting to the reader is the portion dealing with blazonry or the science of wording the description of the coat of arms of the unit so that other persons familiar with heraldry may mentally picture the coat of arms. This is an exacting phase of the heraldic art with its own laws and rules. To illustrate this point, the blazonry of the coat of arms we have just designed is as follows:

Gules, a bend azure, fimbriated or. In sinister chief a giant cactus proper, fimbriated of the third, in dexter base a Kataipunan sun proper. The crest, lightning flashes saltirewise of the third, on a torse of the first and third. On a scroll of the third the motto, "Give it one more try," sable.

The book *Intelligible Heraldry*, by Sir Christopher and Adrian Lynch-Robinson, D. Van Nostrand Co., Inc., New York, gives an informative and entertaining coverage of heraldry.

THE RIVER AND THE GAUNTLET

An outstanding story of the Eighth Army retreat in 1950 before the Communist assault. Includes Operation Roadblock—Second Division. A vivid and realistic portrait of a bitter battle with the Chinese Reds.

By Brig. Gen. S. L. A. Marshall \$5.00

THE AAA RECORDS SECTION TRAINER

By 1ST LIEUT. ROBERT L. JONES

PROFICIENT and economic training of observers for AAA records sections is being accomplished at the Third Army AAA Training Center, Camp Stewart, Georgia by the use of a versatile training aids device, the AAA Records Section Trainer.

Designed and built at the Third Army Training Aids Sub-Center, Camp Stewart by the writer, Post Records Officer, and 2nd Lt. James F. Jordan, Post Training Aids Officer, the trainer simulates the actual view as it would appear to an observer through the observing scope on the AAA B. C. Scope set at 20 power.

With a series of lights behind a plastic screen, bursts of AA projectiles are simulated on the screen as desired by the instructor. This enables the instructor to give the observers an accurate preview and instruction on what they will encounter while observing on the firing range.

The economy resulting from the use of this training aid in the classroom or in the field can be measured in man hours saved and in dollars and cents by the following means: first, the observer crews can be properly trained without the use of live ammunition or the personnel needed to fire the guns, saving the cost of the ammunition and man

hours required for firing; second, use of the trainer greatly aids the records officer in the selection of the most alert and qualified men as observers prior to the service practices, and at the same time will increase the speed and accuracy of those men selected.

The trainer consists of two cabinets, the screen cabinet and the control cabinet. The screen cabinet is six feet high and four feet wide consisting of a plastic screen blacked out beyond the circumference of the circle and inscribed with cross hairs. The lateral and vertical cross hairs are marked off in mils exactly as the observers scope.

The control cabinet consists of a control panel and a rostrum. On the control panel are twenty control buttons in four rows of five buttons each. Each row controls one quadrant of the screen. Powered by a six volt dry cell battery, the control panel is connected to the screen by a cable made of extension cord wire with each wire split to serve two lights. Eleven wires are split making a twenty-two Conductor Cable, one of which is connected to the battery. The cable is made long enough to place the control cabinet at the rear of the class where the instructor has a complete view of the screen and the students.

To assist in the training of a complete

records section, the screen cabinet is also equipped with three sliding boards located behind the screen. One board duplicates a recorder's form, another shows the computation score form and the third is a plain blackboard used in working problems or showing diagrams to the class. A detachable headboard on the top of the screen cabinet accommodates two window shape type charts which can be used to assist the instructor further.

Built in its present form, the estimated cost of this trainer is \$350 which includes materials and labor with a 10% overhead for original models.

Its versatility is such that the trainer is readily adaptable for instruction on any type of telescope such as the radar parabola scope, tracker-head scope, and binoculars, with slight modification.

With the use of this trainer no longer do firing units have to contend with using records observers suffering from visual hallucinations, inability to coordinate mind, eyes, and speech during rapid firing. As the typist or radar PPI operator can overcome deficiencies by constant practice, so the records section can be brought to the desired level of proficiency without sacrificing ammunition, firing time and labor.



M/Sgt. Barnes, Shop Foreman, demonstrates the AAA Records Section Trainer.

U.S. Army Photos

THE AAA DEFENSE PLANNING TEMPLATE

By MAJOR C. P. ROUNTREE

Artillery

Introduction

IF you happen to be an AAA gun battalion S3, or a group or brigade S3, you will know the need for aids that speed up the planning processes. Changes in locations occur often and many orders are issued orally. Quite often a group S3, for example, receives a three line message which says in brief to move units to new location and prepare gun defenses. If the S3 has two gun battalions his first concern is the location of the gun batteries. First, appropriate maps are laid out, size of the area to be defended is determined, and battery locations and analysis follow. Gun circles are drawn either on the map or on overlay paper. Eight radii are drawn and their intersection with the gun circle determines the best location. So often at this stage, however, battery locations are not possible based on map indications. Thus, the process of re-drawing radii and circles begins until the best solution is obtained. This is the time when the S3 needs an aid that will speed up the mechanics of preparing

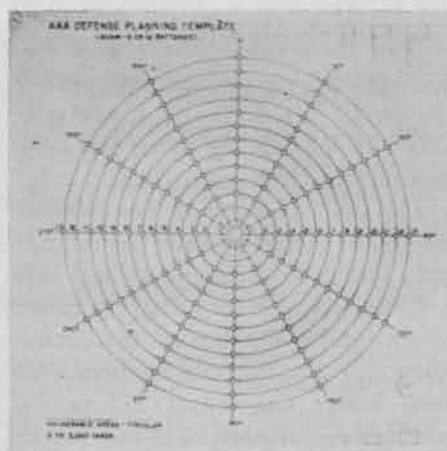


Figure 1B—Template for 6 or 12 Batteries.

this defense, and it is the purpose here to describe such an aid.

Under ideal conditions of terrain, planning tables now exist which give data on the best solution. In each case the S3 is striving to plan the most effective defense. It might be assumed that actual solutions in accordance with designed planning factors are seldom achieved. Experience in observing battalion and group operations for more than two years shows otherwise. Where defenses are over land masses, the "school solution" can, in most cases, be obtained by careful analysis. Of course, there may be special conditions which have to be worked out on an individual basis. Generally, though, the "school solution" can be obtained in most cases. This aid, which we call the "AAA Defense planning template," is nothing more than a graphical representation where the planning factor table for the 90mm can be applied.

Description of Template

THE best arrangement from a standpoint of usage would be to have three templates: one for 4 and 8 batteries; one for 6 and 12 batteries; and one for 16 batteries. (Figures 1A, 1B, and 1C.) With this arrangement the S3 can select one or more as desired. These templates are designed to the same scale as the

Fire Unit Analyzers.

Any one of these templates can be made in the S3 office. A piece of clear reasonably heavy acetate is the most ideal material to use. All lines can be etched with compass and needle and filled in with grease pencil. Gun circles are drawn in appropriate increments according to scale. The small circles representing battery sites are drilled out to allow pencil markings of positions. The flag, block, and radar cut-outs can be omitted, but are helpful in submitting overlays showing positions. Although templates for 90mm are the only ones discussed here, the same types can be prepared for 120mm.

Uses

TAKING the 4 and 8 battery template shown in Figure 1A and comparing it with the AAA Planning Factor Table, it can be seen that any combination of vulnerable area and four or eight batteries is shown. Thus, you merely have to determine the size of the area to be defended and the optimum gun



Figure 1A—Template for 4 or 8 Batteries.

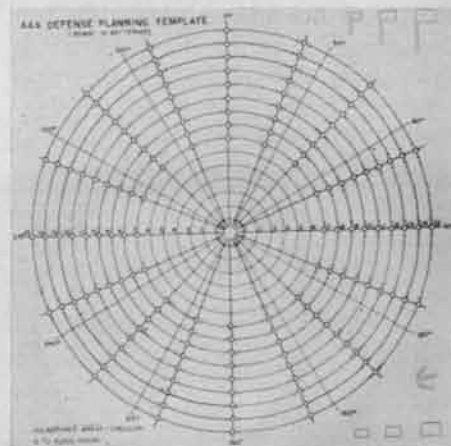


Figure 1C—Template for 16 Batteries.

ring, and the template has the graphical solution for you.

Here is a typical example of its use and advantage: You have been given the mission to defend an area with eight batteries. The vulnerable area is shown in black cross-lines on the map in Figure

Major Rountree graduated at V.P.I. in 1940 and entered active duty as 2nd Lt. CA Reserve. Integrated into the RA in 1946, he has served with the 12th AAA Group Staff in Germany since 1951.

2A. Use the template to find out the radius of the area. In continuing your process, then, you would center the template over the defended area with the "0" radii pointing northward and parallel to the grid lines. Then insert a pin in the center. In this case the vulnerable area has a radius the size of circle one (1). After referring to the planning factor table you decide that the batteries should be located on the number five (5) ring (see FM 44-1). (With grease pencil check on the template the battery positions to be used.) This situation is shown in Figure 2A. In observing the location of each battery, you can see that two batteries (northeast and southwest) are located in the river. Bearing in mind that you have the approved

solution on the template, begin to rotate it to various positions until an observation of all eight batteries reveals ideal map locations. As a result of this analysis, Figure 2B shows that the approved solution can be applied in this case—the map indicates that each battery can be located as shown with reasonably good access to positions. This template, therefore, has eliminated the necessity to draw on the map or overlay paper. It has permitted you to determine the "Best Solution" rapidly and with the least amount of work.

This template can also be used to check the accuracy of a defense submitted by a subordinate headquarters. This can be done by placing the template over the defense submitted and

determining how close it comes to being the "Best Solution." The gun circles assist you in checking battery locations radially—to determine if they do not deviate from the best position more than is normally permitted. The tick-marks on the gun rings located on each side of the small circles (battery positions) will assist in checking deviations on the gun circles.

After the exact positions of the batteries have been determined, an analysis follows, using the Fire Unit Analyzer. Therefore, radii at each 30 degrees are shown on the template to assist in this process. This eliminates the necessity of drawing these lines each time an analysis is required.



Figure 2A—Orientation of 4 or 8 Battery Template with grid North.



Figure 2B—4 or 8 Battery Template in approved position for the defense.

FORT TOTTEN

By 1st LIEUT. JOSEPH W. LEMIEUX

Aide-de-camp, 56th AAA Brigade

The movement of the 56th AAA Brigade to Fort Totten in January of this year returned that post to its standing as an artillery center.

Designed originally to guard the entrance to New York harbor during the Civil War, Fort Totten enjoys military traditions dating back to the French and Indian War.

In 1862, construction work began on the lower fortifications along the Sound. Powder and munitions magazines were built at the top of the hill, connected with the shore fortifications by the first

vehicular tunnel in New York City; a thousand-foot tunnel completed in 1863. In 1864, an economy-minded Congress discontinued work on the coastal fortifications and they were never finished.

The fort was subsequently the home of the Grant General Hospital (1864); the Battalion of Engineers (1865) and the Engineering School (1868).

At the time of the Spanish-American War, a second set of fortifications was constructed on the hill above the original coastal batteries. This consisted of two large 10-inch disappearing guns, one 7-

inch gun and 8 and 12 inch mortars.

On 23 July 1898, President McKinley signed an order designating that the Fort at Willets Point at the East Entrance to New York harbor be called Fort Totten in honor of Brigadier General Joseph G. Totten, who was serving as the Chief of Engineers at the time of his death on 22 April 1864. His untimely death resulted from wounds received during the siege of Vera Cruz, Mexico.

In 1903, the Coast Artillery took over Fort Totten, manning it with five bat-

teries. During World War I, additional guns were installed. The fort was also used as a concentration area for troops until time for them to board transports for France.

In 1922, the 62nd Coast Artillery Regiment arrived at this fort. This unit was equipped with antiaircraft weapons and later became a mother unit for the United States antiaircraft artillery defense system. In July 1942, this Regiment, after having furnished cadres for many AA units, departed for service in the ETO.

During 1937 and 1938, extensive improvements were made at the Fort. Buildings were remodelled and modernized, new roads constructed, swamps and marshy areas filled in and the Fort was beautified and improved to the point that it became one of the most attractive army establishments in the United States. To this day, local citizens refer to the fort as the "Country Club."

In December 1941, the Antiaircraft Artillery Command of the Eastern Defense Command was organized at Fort Totten under command of Major Gen. Sanderford Jarman. From 1942 to 1944, Fort Totten was used as a concentration area for the Antiaircraft Artillery Command. There was a constant flow of AAA units reporting in to the Fort Totten headquarters, where they were reassigned to outlying stations in the New York area and to points as far away as Camp Stewart, Georgia.

The newest antiaircraft artillery weapons were minutely tested at Fort Totten during that period. The first radar used on the East coast was installed in 1941. The M1 Polaroid Training School, a new method of training antiaircraft gunners, was operated at the Fort during 1944 and men from the Harbor Defenses of New York, Long Island Sound and Narragansett Bay attended.

The AAA Command left Totten in September 1944.

In that same month, the 1379th AAF Unit of the North Atlantic Wing, Air Transport Command, arrived. The Fort was used for the housing of the soldiers and officers who operated the LaGuardia Field terminal of the North Atlantic Wing of the ATC.

The Fort of today covers an area of 147 acres. The lower fortifications, constructed in 1862-1864, are still in good condition and numerous boy scout troops

and adults enjoy visiting it. Most of the buildings are of prewar brick construction with additional frame structures required for housing of World War II troops. It is presently commanded by Brigadier General Harry F. Meyers, and Colonel W. H. E. Holmes is Deputy Post Commander.

Fort Totten continues to maintain its reputation of guardian of New York City by furnishing support to AA troops presently on sites for the defense of the city. Major units located in the fort are:

Headquarters and Headquarters Battery, 56th AAA Brigade—commanded by Brigadier General Harry F. Meyers and charged with the AA Defense of critical areas in the First Army area.

Headquarters and Headquarters Battery, 41st AAA Gun Battalion—commanded by Lt. Col. Carl F. Chirico and participating in the New York Defense.

Headquarters and Headquarters Battery, 34th AAA Gun Battalion—commanded by Lt. Col. Harry B. Reubel and participating in the New York Defense. Baker Battery is on site in the reservation.

Headquarters and Headquarters Battery, 526th AAA Gun Battalion—com-

manded by Major Irving L. Kanoff and participating in the New York Defense. Charlie Battery is on site in the reservation.

326th AA Operations Detachment—commanded by Lt. Donald F. Leary and participating in the New York Defense.

Armed Services Medical Procurement Agency—the Engineering Development Division of the Agency carries on extensive projects in the development of pilot models of new items of field medical equipment, as well as re-engineering and designing present equipment. The Army, Navy and Air Force have combined their efforts at Fort Totten in this laboratory to evolve types of medical equipment that will best meet the needs of the Armed Forces.

It is interesting to note that the 56th AAA Brigade Headquarters and Headquarters Battery is occupying the same building that in the past housed the 62d Coast Artillery Regiment and the Antiaircraft Artillery Command.

Camp Hero, Fort Tilden and Fort Terry are satellites of Fort Totten. AA troops are also based on and supported by Camp Hero and Fort Tilden.

UNIT ACTIVITIES

56th AAA BRIGADE

In January of this year, the reorganization of AAA units assigned to the Air Defense of the United States was put into effect. Headquarters and Headquarters Battery, 56th AAA Brigade, commanded by Brigadier General Harry F. Meyers, was ordered to move from Fort Devens, Mass. to Fort Totten, New York and assume command of all AA troops in the Air Defense of the First Army area, with the exception of elements of the 53d AAA Brigade in New Jersey, effective 26 January 1953.

This reorganization has worked out very well. Closer liaison with supporting headquarters has been established and the feeling that the AA troops and servicing branches are a "team" has greatly increased. This is a result of the visits by General Meyers and his staff to First Army Headquarters, supply depots and ordnance maintenance units and depots. These liaison visits have been further implemented by command-



U.S. Army Photo
Brig. Gen. Harry F. Meyers

ers down to and including battalion level so that this relationship has now progressed to a social as well as a military status. The presentation to the services of our critical mission and the requirement for immediate and thorough support was just about all that was needed to get 100% cooperation from them. This

is being borne out by our steadily increasing percentage of operational readiness.

Camp Hero, at Montauk Point, Long Island, and Fort Tilden, both satellites of Fort Totten, as well as other posts in the locality of AA troops in the First Army Area each have Ordnance Fire Control teams supporting our units. Each of these teams is normally composed of one officer and seven enlisted men. They are continually on the go within the defense areas, checking fire control equipment and repairing it then and there if possible and instructing new personnel on the proper maintenance and operation of that equipment. Their work has been invaluable because of the inexperience of the personnel we have.

The increase in mission was not accompanied by an increase in personnel. Trying to wade through the multitude of "home work" while maintaining teams to visit the defenses in the First Army areas has proven to be quite a task. It is very rare when three or four members of the staff are not on the road. However, as problems are met and conquered, the feeling of optimism is climbing. These teams are always on the alert for worthwhile ideas to pass on from one defended area to another. Many improvements in housekeeping have resulted from this.

A heavy blow was dealt to the efficiency of the unit in the first week of March when thirty enlisted men of the original assignments made to the Headquarters Battery upon its activation in February 1951 departed for discharge. Most of the men held key positions in the staff sections. Fortunately we received some men from training centers with eight weeks basic training. Some of these men had civilian skills which could be utilized in the unit. After teaching them the Army version, they fitted right into most of the slots vacated.

Major Worth C. Conner, S4, and WOJG Percy Clayworth, Food Service Advisor, departed for the Far East in the latter part of February. They were replaced by Captain Daniel G. Kane and WOJG Kenneth W. Brown. Other recent arrivals are 1st Lt. Anthony W. Kay and CWO Werner Boehme, S4 Section.

General Meyers is now in command of the Eastern Army Antiaircraft Command during the leave of absence of Brigadier General Frederic L. Hayden.



U.S. Army Photo

Target practice in the 85th AAA Gun Battalion.

53d AAA BRIGADE

Brigadier General Robert J. Wood returned on 14 May to assume command of the 53d AAA Brigade after 90 days TDY in connection with activities of the Mutual Security Program. In his absence the Brigade was commanded by Colonel Arthur C. Peterson. Colonel Peterson, whose normal assignment is Commanding Officer of the 24th AAA Group, Philadelphia, will go to Washington on 1 July for a new assignment.

Colonel Joseph C. Connel will take over the 24th AAA Group following Colonel Peterson's departure. New AAA gun battalion commanders in the 24th Group are: Lt. Col. Clyde Gregory, 51st; Lt. Col. William Horton, 738th; and Major Engle R. Brooks, 19th.

Lt. Col. Charles E. Roden, Executive Officer, 24th Group, and Major Thomas M. White, Executive Officer, 51st Battalion, have returned from the Command General Staff School.

Colonel Cecil E. Spann, Commanding Officer of the 18th AAA Group, Pittsburgh, will go to the Army War College in August. Lt. Col. Thomas S. Reilly has taken command of the 74th AAA Gun Battalion in the 18th AAA Group.

97th AAA GROUP

The past 12 months have been very eventful ones for the 97th AAA Group based on Okinawa. Defense against pos-

sible air attacks which might be sent to destroy air bases on Okinawa is the mission of the 97th. Under the guiding hand of Colonel Eugene H. Walter, the group commander, the unit has risen to this responsibility with full measure of alertness and *esprit*.

The 97th, composed of the 22nd AAA AW Bn, 65th AAA Gun Bn and the 85th AAA Gun Bn plus the 507th AAA Opns Det., is presently being operated under strict tactical control. Fire units that are largely isolated form a protective ring of AAA weapons around this Gibraltar of the Pacific. Because of this isolation there is a definite morale problem, but a diversified training program, plus wholesome and plentiful entertainment, have all but eliminated this hazard. Presently a plan to move all the men of the units from tent quarters to permanent-type buildings has been effected. Under this improvement of position campaign many of the automatic weapons fire units have already been moved into prefabricated housing.

Annually, all Battalions are engaged in three service practices. Antiaircraft Artillery firing on Okinawa is difficult to carry out on schedule—just like so many other places. A prophet's qualifications are often required in coordinating the use of the range with other armed forces, and forecasting the weather, since the weather on Okinawa is usually cloudy with scattered showers.

No definite wet or dry seasons exist on Okinawa, nor do the frequent typhoons and typhoon wind conditions have a fixed season. Seemingly, the typhoons are more frequent during the scheduled firing periods, despite the variance of the schedule. Nonetheless, the 97th to date can boast a successfully completed target practice every firing season.

Organization Day, the anniversary of the 97th AAA Group, is annually observed on 1 May. At this time all elements of the Group come together and stage a large celebration in tribute. Field events, motor rodeo, baseball, softball, and many other events constitute the program. The 97th was fortunate this year in having a 10-bout boxing card staged for their benefit. Many members of the unit competed and climaxed a perfect day. Organization Day was bigger and better than ever. Perhaps the highlight was the presentation to the 85th AAA Gun Bn., of four battle streamers won by them in the England, Rhineland, Ardennes-Alsace, and Central Europe campaigns during World War II. Maj. Gen. David A. D. Ogden, Commanding General, Ryukyus Command, presented the streamers at a colorful, formal retreat ceremony.

Lt. Col. Nelson Burge, CO, 22nd AAA AW Bn, and Captain Lawrence B. Peterson have recently departed this command. Soon Col. Eugene H. Walter, Group CO; Lt. Col. Maurice J. Palizza, Executive Officer; Lt. Col. William F. Kuhn, CO, 85th AAA Gun Bn; and Lt. Col. Harry C. Brown, CO, 65th AAA Gun Bn, are all due to depart for the ZI. Recent arrivals include: Lt. Col. Harry E. Eaton; Lt. Col. David Y. Nanney; Lt. Col. Reed J. McCracken and Maj. Darius J. Crews.

31st AAA BRIGADE

Brig. Gen. E. F. Cardwell, Commanding

On 20 April 1953, Lt. Col. Franklin A. Werner departed from the 31st AAA Brigade for Camp Roberts, California, to assume command of the 52d AAA AW Bn.

During his assignment to the 31st AAA Brigade, Lt. Col. Werner served successively at Camp Hanford, Washington, as Commanding Officer, 501st AAA Gun Bn, Executive Officer, 5th AAA Group, and Commanding Officer, 518th AAA Gun Bn.

Following a short period of temporary

duty at the AA & GM Center, Colonel Harold G. Haskell joined the 5th AAA Group at Camp Hanford, Washington, in April. Colonel Haskell is currently serving as Executive Officer, 5th AAA Group preparatory to assuming command of that organization when Colonel John C. Steele departs for the National War College course.

On 20 April 1953, the 10th AAA AW Bn (SmbL), stationed at Geiger Field, Spokane, Washington, was relieved from attachment to the 5th AAA Group and reverted to its former status, reporting directly to the Commanding General, 31st AAA Brigade. The battalion is currently engaged in training under Army Training Program, 44-302.

Captain Martin A. Small, S. C., was recently assigned to Brigade Headquarters as the communications officer.

17th AAA GROUP

Catonville, Maryland

Colonel Frank J. Zeller assumed command of the 17th AAA Group which was activated on 10 April 1953. This new group continued the functions of the 208th AAA Group, a Connecticut National Guard unit which completed its period of Federal Service in May 1953. Major Paul J. DeSio and Major Francis Crowe, formerly S1 and S3 respectively, have returned to Connecticut with the 208th AAA Group and are continuing their military avocation there.

Principal staff officers in the new group are Lt. Col. Robert R. Corey, Executive (now on orders for FECOM); Lt. Col. James S. Young, new Executive and S3. Capt. Victor J. Zebrowski, formerly S4, has departed for guided missile training at Fort Bliss. His position was recently filled by Capt. James J. Harrison who has just returned from Korea. Early in June it is expected that Major J. W. Mann will return from the Command and General Staff School to round out the 17th AAA Group staff by filling the S1 and S2 vacancies.

Among the Battalions composing the group Lt. Col. Wm. H. Price, Jr. commands the 35th AAA Gun Battalion and Lt. Col. Robert E. Frith, the 602nd. The 89th Battalion, recently commanded by Lt. Col. Thomas H. Barfield, is now under the guidance of Lt. Col. James Kravitz, since Colonel Barfield departed early in May for duty in the G3 section of the AA & GM Center at Fort Bliss.

Lt. Col. Mark C. B. Klunk, now overseas, is expected to join the group in July.

65th AAA GROUP

Fort Clayton, Canal Zone

Colonel Ben E. Cordell, Group Commander, has recently returned to duty after a few weeks illness in the Fort Clayton Hospital. Lt. Col. Reinhard L. Speltz was in command during the period. Lt. Col. Veto Blekaitis is still the Group S3 and Major Walter E. Badger, the Adjutant. Other key staff officers are: Major Victor Stefanis, Radar O; Capt. Douglas A. Armstrong, Comm. O; 1st Lt. Albert W. McDaniel, S4; Capt. Kirk M. Rose, Btry. Comdr.; Major G. M. McKelvy, CO., 506th AAA Oprs. Det.; 1st Lt. Melvin Holst, CO., 38th RCAT.

Lt. Col. Frank J. Petrilli commands the 903rd AAA AW Battalion with headquarters at Fort Clayton. Major Richard F. Taylor is the Exec and Major Woodrow A. Jones, the S3.

Lt. Col. Elton D. Winstead commands the 764th AAA Gun Battalion at Fort Davis with Lt. Col. John G. Wiggs as his Exec and Major Bernard G. Simms as S3.

26th AAA AW BATTALION (SP)

Lt. Col. Wilson H. Birch, Commanding

For the readers and former members of the battalion who like to keep in touch, some highlights of our activities are reported.

The 26th AAA AW Bn (SP), an integral part of the 24th Infantry (Victory) Division, is in a training status in Japan. Battalion headquarters and D Battery are stationed with the Division Artillery Headquarters, and other Batteries are parts of the three Regimental Combat Teams. The Batteries are widely scattered with the minimum distance apart being 30 miles and the maximum distance apart being 400 miles.

Captains Charles J. Walczak, Kenneth A. Mosher, William J. Clark, Herman W. Riedeburg, and Grady T. Smith command Batteries A, B, C, D and Headquarters respectively. These commanders are doing an excellent job in maintaining the overall efficiency of their units under conditions inherent in working for and under another com-

(Continued on page 36)

HONOR ROLL

Original Honor Roll

88th AAA Airborne Bn
Lt. Col. R. B. Barry, Jr.
228th AAA Group
Col. T. H. Pope
107th AAA AW Bn (M)
Lt. Col. E. R. McIver
305th AAA Group
Col. John S. Mayer, N. Y.

Separate Commands

Central AAA Command
Col. D. J. Bailey
Hq Western AAA Command
Brig. Gen. E. J. McGaw
Hqs. Far East AAA Spec. Sch.
Lt. Col. W. H. Nicolson

Guided Missile Dept.

AA & GM School
Col. F. M. McGoldrick
Officer Candidate School
Col. K. R. Kenerick
AAA Repl Training Center
Col. E. W. Heathcote
Dept. of Gen. Subs.
AAA & GM School
Lt. Col. R. M. Page, Jr.
Electronics Dept.
AAA & GM School
Col. P. W. Shunk
Non-Resident Ins. Dept.
AAA & GM School
Col. T. H. Watkins

Brigades

34th AAA Brigade
Brig. Gen. R. W. Chrichlow
35th AAA Brigade
Brig. Gen. T. V. Slayton
45th AAA Brigade
Col. F. F. Miter
47th AAA Brigade
Col. G. C. Gibbs
56th AAA Brigade
Brig. Gen. H. F. Meyers
105th AAA Brigade
Brig. Gen. A. H. Doud, N. Y.
107th AAA Brigade
Brig. Gen. J. W. Squire, Va.
111th AAA Brigade
Brig. Gen. Chas. G. Sage, N. Mex.
112th AAA Brigade
Brig. Gen. J. W. Cook, Calif.
261st AAA Brigade
Brig. Gen. J. B. Moore, Del.

Groups

1st Composite Group
Col. T. H. Leary
2nd AAA Group
Col. A. S. Buynoski
4th AAA Group
Col. L. A. Bonifay
5th AAA Group
Col. J. C. Steele
6th AAA Group
Col. A. A. Adams
7th AAA Group
Col. M. J. Martin
8th AAA Group
Col. O. H. Kyster, Jr.
11th AAA Group
Col. F. H. Shepardson

13th AAA Group

Col. W. C. Mahoney
26th AAA Group
Col. H. D. Lind
29th AAA Group
Col. P. L. Wall
30th AAA Group
Col. W. H. Murray
65th AAA Group
Col. B. E. Cordell
68th AAA Group
Col. W. B. Hawthorne
142d AAA Group
Col. R. Hardy, Ala.
197th AAA Group
Col. A. S. Baker, N. H.
200th AAA Group
Col. C. M. Woodbury, N. Mex.
205th AAA Group
Lt. Col. J. H. Findell
207th AAA Group
Lt. Col. R. G. Irish, N. Y.
211th AAA Group
Col. D. MacDuff, Mass.
214th AAA Group
Col. J. G. Johnson, Ga.
218th AAA Group
Col. V. P. Lupinacci, Pa.
220th AAA Group
Col. R. H. Hopkins
224th AAA Group
Col. E. W. Thompson
233rd AAA Group
Col. W. T. Stone, Calif.
243rd AAA Group
Col. E. E. McMillan
260th AAA Group
Col. G. V. Selwyn, D. C.
302nd AAA Group
Col. J. M. Welch
313th AAA Group
Col. A. F. Hoehle
326th AAA Group
Col. M. D. Meyers, Pa.
374th AAA Group
Col. T. F. Mullaney, Jr., Illinois
515th AAA Group
Col. F. G. Rowell, N. Mex.

Battalions

1st AAA Training Bn
Col. J. H. Doyle
2nd AAA AW Bn
Lt. Col. R. F. Meconi
2nd AAA Training Bn
Maj. J. D. Benner
3rd AAA AW Bn
Lt. Col. O. A. Moomaw
3rd AAA Tng. Bn.
Lt. Col. A. S. Naylor
4th AAA AW Bn
Lt. Col. E. O'Connor, Jr.
4th AAA Training Bn
Maj. K. L. Bouillon
5th AAA Training Bn
Maj. F. R. Whitehead, Sr.
6th AAA Training Bn
Lt. Col. G. L. Crawford, Jr.
7th AAA AW Bn
Lt. Col. H. E. Michelet
8th AAA AW Bn
Lt. Col. W. A. Stricklen

8th AAA Training Bn

Maj. M. D. Kert
9th AAA Training Bn
Maj. W. E. Osburn
10th AAA Training Bn
Lt. Col. V. T. Terribile
11th AAA AW Bn
Lt. Col. J. E. Wales
11th AAA Training Bn
Lt. Col. A. O. Chittenden
12th AAA Gun Bn
Lt. Col. P. R. Cibatti, Jr.
12th AAA Training Bn
Maj. L. E. Marlowe
14th AAA Gun Bn
Maj. H. C. Lorch
15th AAA AW Bn (SP)
Lt. Col. J. Y. Brightman
18th AAA Gun Bn
Maj. G. W. Seabrook, Ill
20th AAA Gun Bn
Lt. Col. C. F. Ottenger
21st AAA AW Bn (SP)
Lt. Col. D. B. Williams
32nd AAA AW Bn
Lt. Col. E. F. Moody
34th AAA Gun Bn
Lt. Col. H. B. Reubel
36th AAA Gun Bn
Maj. L. D. Pazy
37th AAA Gun Bn
Maj. R. G. Duncan
38th AAA Gun Bn
Maj. C. D. Arnold
39th AAA AW Bn (M)
Lt. Col. P. J. Lacey, Jr.
41st AAA Gun Bn
Lt. Col. C. F. Chirico
48th AAA Gun Bn
Lt. Col. D. W. Malone
49th AAA Gun Bn
Maj. C. O. Laffite
50th AAA AW Bn
Lt. Col. J. O. Hodgson
53rd AAA Gun Bn
Lt. Col. J. H. McCann, Jr.
56th AAA Gun Bn
Lt. Col. M. A. Selsor, Jr.
60th AAA AW Bn
Lt. Col. Wm. D. Ward
63rd AAA Gun Bn
Lt. Col. C. F. Coffey
64th AAA Gun Bn.
Lt. Col. D. B. Nye
65th AAA Gun Bn
Lt. Col. H. C. Brown
66th AAA Gun Bn
Lt. Col. J. C. Wilkerson
70th AAA Gun Bn
Lt. Col. J. E. Barton
71st AAA Gun Bn
Lt. Col. B. R. Brown
73rd AAA AW Bn
Lt. Col. P. W. Pedratti
74th AAA Gun Bn
Lt. Col. R. S. Reilly
76th AAA Gun Bn
Lt. Col. S. R. Kelley
77th AAA Gun Bn
Lt. Col. W. P. Wright, Jr.
79th AAA Gun Bn
Lt. Col. W. A. Brinkerhoff
80th AAA Airborne Bn
Lt. Col. J. Evans

82nd AAA AW Bn

Lt. Col. H. K. Clark
83rd AAA Gun Bn
Lt. Col. A. P. Dahl
95th AAA Gun Bn
Lt. Col. P. E. Pique
96th AAA Gun Bn
Lt. Col. R. E. Hood
97th AAA Gun Bn
Lt. Col. W. F. Carcoran
102nd AAA Gun Bn
Maj. E. R. Welte, N. Y.
120th AAA Gun Bn
Lt. Col. H. C. Gray, N. Mex.
123rd AAA Gun Bn
Lt. Col. I. E. Dominguez, P. R.
126th AAA AW Bn
Lt. Col. R. C. Carrea
127th AAA AW Bn (SP)
Lt. Col. H. G. White, N. Y.
133rd AAA AW Bn
Lt. Col. E. J. Modjeske, Illinois
137th AAA AW Bn
Maj. F. R. Nairn
140th AAA AW Bn
Lt. Col. L. H. Ripley
144th AAA AW Bn
Lt. Col. R. T. Dunn
145th AAA Gun Bn
Lt. Col. H. J. Cunningham
150th AAA Gun Bn
Lt. Col. L. O. Ellis, Jr., N. C.
168th AAA Gun Bn
Lt. Col. R. E. George
243rd AAA AW Bn
Lt. Col. E. E. McMillan
271st AAA AW Bn
Lt. Col. L. C. Saylor
336th AAA Gun Bn
Lt. Col. P. A. Voyatzis
340th AAA Gun Bn
Lt. Col. R. T. Bard, D. C.
387th AAA Gun Bn
Lt. Col. R. Wetherall
443rd AAA AW Bn (SP)
Lt. Col. T. F. Gordon
450th AAA AW Bn
Lt. Col. G. W. Shivers
459th AAA AW Bn
Lt. Col. W. F. Shaver
464th AAA AW Bn
Maj. J. Munroe, Ala.
495th AAA AW Bn
Lt. Col. G. E. Miller
501st AAA Gun Bn
Lt. Col. J. C. Parker
502nd AAA Gun Bn
Lt. Col. P. J. Maline
505th AAA Gun Bn
Lt. Col. M. E. Chotas
506th AAA AW Bn
Lt. Col. J. H. Valliere
507th AAA AW Bn
Lt. Col. J. M. Carson
513th AAA Gun Bn
Lt. Col. H. McLaughlin, Jr.
518th AAA Gun Bn
Maj. L. T. Hansen
519th AAA Gun Bn
Lt. Col. A. E. Holt
526th AAA Gun Bn
Lt. Col. W. T. Lind
531st AAA AW Bn
Col. P. J. Gunlach
550th AAA Gun Bn
Lt. Col. N. E. Cole

26th AAA AW Battalion (SP)

(Continued from page 34)

mander when its parent headquarters is playing the role of a training inspector. In spite of this condition the "Ack-Ack" standards are always high, and annual IG inspections, Command inspections, and other reports always place the 26th high in its accomplishments.

Three service practices are held yearly. The ranges used are at Katakai and Misawa. These ranges are under the control of the 40th AAA Brigade, a separate major command. The firings indicate the need for more service practices, since teamwork during actual firing is a must. The rotation problem is reflected at each new firing. New teams must be built. Replacements from other than antiaircraft sources must be sold on the weapon. Many such soldiers freeze on the weapons, and psychologically cannot fire. Drills and training are good, but only firing brings out certain characteristics of the individual and the required degree of teamwork to keep a weapon firing.

Recently the Division Artillery Commander presented the first battalion standards received by this unit. An appropriate formal ceremony with field music was held. A short time later the battalion received its four World War II streamers earned by the 784th battalion in Europe.

On the 28th of April all members of the battalion stationed with the Divi-



U.S. Army Photo

Headquarters Battery, 26th AAA AW Bn (SP), pass in review.

sion Artillery headquarters together with the 3d Battalion of the 21st Infantry Regiment participated in a review in honor of Michio Muragama, Governor of Yamagata Prefecture, celebrating the first anniversary of the ratification of the Japanese Peace Treaty. An estimated 3,000 spectators many of whom were Japanese Nationals viewed the parade.

Five officers currently remain with the battalion who were with it in Korea. They are Major Thomas E. Kavanaugh, Captain Charles J. Walczak, 1st Lieutenant Harry G. Estes, 1st Lieutenant Don P. Morgan, and WOJG Eugene C. Lee.

The history of the 26th AAA AW Battalion traces back to the 7th Regiment of Artillery, activated at Fort Slo-

cum, N. Y., in 1898. In the lineage the 748th AAA AW Battalion served in Europe in World War II with a distinguished record.

Battery A was activated in March 1949 and assigned to the 24th Infantry Division moving into the battle in Korea with the Division in July, 1950. Battery A has been awarded the Presidential Unit Citation, the Korean Presidential Unit Citation, and battle honors for seven campaigns in Korea.

The remaining batteries in the Battalion were activated on the battlefield in Korea with cadres from A Battery plus Hq and Hq Battery, 52nd AAA AW Bn and Battery A, 21st AAA AW Bn.

Lt. Col. Roy A. Tate was the first Battalion commander.

Honor Roll—Continued

552d AAA Gun Bn
Lt. Col. J. Strickland
554th AAA Gun Bn
Lt. Col. F. J. Lagasse
678th AAA AW Bn
Maj. J. B. Crayton, S. C.
697th AAA AW Bn
Maj. W. C. Thompson, N. Mex.
698th AAA Gun Bn
Lt. Col. F. Monico, Illinois
701st AAA Gun Bn
Lt. Col. F. F. Quist
705th AAA Gun Bn
Lt. Col. F. O. Roever
708th AAA Gun Bn
Lt. Col. P. L. Getsinger
710th AAA Gun Bn
Capt. T. T. Chisman
712th AAA Gun Bn
Lt. Col. R. W. Harnett
716th AAA Gun Bn
Lt. Col. J. R. Stewart, N. Mex.
717th AAA Gun Bn
Lt. Col. E. D. Pelzer, N. Mex.

720th AAA Gun Bn
Lt. Col. G. A. Duke, Calif.
724th AAA Gun Bn
Lt. Col. E. H. Hahn
726th AAA Gun Bn
Lt. Col. C. F. Arnold, N. Mex.
737th AAA AW Bn
Lt. Col. B. W. Perry
764th AAA Gun Bn
Lt. Col. E. D. Winstead
768th AAA Gun Bn
Lt. Col. T. H. Kuyper
773rd AAA Gun Bn
Lt. Col. G. F. Slavin
804th AAA AW Bn (M)
Maj. S. N. Caudill, N. Mex.
867th AAA AW Bn
Lt. Col. W. R. Parr
903rd AAA AW Bn
Lt. Col. F. J. Petrilli
933rd AAA AW Bn
Lt. Col. R. M. Huston

950th AAA AW Bn
Lt. Col. J. P. Wallis, Ga.
951st AAA Gun Bn
Lt. Col. W. G. Babbitt
30th AAA Lt. Btry
Capt. W. A. Brant
Btry A, 37th AAA Gun Bn
Lt. A. B. Whitesides

Operations Detachments

131st AAA Opns. Det.
Maj. J. L. Welling, S. C.
142nd AAA Opns. Det.
Maj. B. D. Boyett, Ala.
177th AAA Opns. Det.
Capt. J. J. Niehoff
181st AAA Opns. Det.
Capt. C. Geek
286th AAA Opns. Det.
Capt. H. J. Tarves
302nd AAA Opns. Det.
Maj. N. L. Funke

327th AAA Opns. Det.
Maj. F. W. Smith
500th AAA Opns. Det.
Maj. C. D. May, Jr.
501st AAA Opns. Det.
Maj. D. I. Grant
502nd AAA Opns. Det.
Capt. J. R. Myers
506th AAA Opns. Det.
Maj. G. M. McKelvy
508th AAA Opns. Det.
Capt. G. J. Lahey
509th AAA Opns. Det.
Maj. J. P. Bodkin
510th AAA Opns. Det.
Maj. R. H. Moser
511th AAA Opns. Det.
Maj. G. J. Burke
515th AAA Opns. Det.
Capt. P. C. Hubble
517th AAA Opns. Det.
Lt. R. A. Durkins

34th AAA BRIGADE

BRIGADIER GENERAL R. W. CRICHLOW,
Commanding

By Major Theodore Wyckoff

Spring and summer 1953 and the advent of good firing weather spell a heavy schedule for 34th Brigade units in Germany. At Grafenwohr Training Area near Nürnberg, the 62d, 73d, 91st and 443d Battalions led off the year's AW firing using a new system of range procedure developed by the Brigade staff, in which the established range fan does double duty by accommodating two firing lines instead of one.

On May 1st, Brigade gun battalions started using a new range at Todendorf, on the Baltic Sea northeast of Hamburg. First on the new range was the 95th AAA Gun Battalion from Mannheim, commanded by Lt. Col. Paul E. Pigue. Coordinating safety regulations, air missions and logistical and administrative details at the new range with the British Army of the Rhine, was a major task accomplished by the Brigade staff. British, Canadian, Belgian, Danish, and Dutch AA units attached to "BAOR" will share the new range with gun battalions of the 34th Brigade.

In April the last of the National Guard units attached to the Brigade returned to the ZI. Headquarters and Headquarters Battery of the 242d AAA Group of the Connecticut National Guard left Federal service, its place in Mannheim being taken by the reactivated Headquarters and Headquarters Battery 1st AAA Group, with Col. Robert A. Kessler in command. Other National Guard units which have recently reverted to inactive status are the 633d and 717th Gun Battalions, which have been replaced respectively by the 40th Gun Battalion, commanded by Lt. Col. Eugene F. Boomer, and the 25th Gun Battalion, commanded by Lt. Col. John A. Bates.

As is to be expected, there is a steady flow of old and new faces. In the 8th Group in Wiesbaden, commanded by Col. Olaf F. Kyster, a recent departure was Lt. Col. Richard I. Shagrin, for over a year CO of the 5th AAA AW Battalion, who left for his new assignment as Secretary, General Staff, Seventh Army.

In the 12th Group, in Karlsruhe, Col. Calvin L. Partin commanding, the 73d AAA AW Battalion and the 552d Gun

Battalion have new commanders: Lt. Col. Charles C. Jeffries, from the AAA and GM Center, Fort Bliss, with the 73d, and Lt. Col. Zebulon L. Strickland with the 552d.

A recent arrival in Europe is Lt. Col. Eric F. Rundquist, who has been assigned duties as chief of the 34th Brigade Testing Team. This team will administer the annual Army training tests to all 34th Brigade battalions and groups as well as to the organic AA battalions of the American line divisions in Germany and the 11th AAA AW Battalion stationed in Salzburg, Austria.

45th AAA BRIGADE

The 45th AAA Brigade Headquarters, Colonel Frank F. Miter commanding, moved to Fort Sheridan, Illinois in February. At the same time the 22nd AAA Group Headquarters, Colonel John Alfrey commanding, moved to the Chicago location on South Shore Drive. There the Group is better located to supervise the battalions in its command.

Last November all of the Brigade units were housed at positions in new Jamesway tents. Permanent type pre-

fabricated buildings are now in the process of construction for all units.

The battalions of the 22nd AAA Group are now using the firing range at Camp Haven, Wisconsin for target practice.

The 28th AAA Group, Colonel John G. Turner commanding, will soon have more convenient firing facilities established at Camp Claybanks, near Muskegon, Michigan, available for its battalions.

Since October the Brigade has graduated 142 officers and men in its splendid operators school for new gun battery fire control.

Beginning June 14 the Brigade will provide support for antiaircraft reserve component training at Camp Haven, Wisconsin and Camp Claybanks, Michigan. Twenty-four National Guard or Reserve units will be conducting their summer camp training.

Lt. Col. S. L. Cone, formerly the Brigade Executive, has been transferred to the Ordnance Corps and duty at Detroit. His successor is Lt. Col. Lee H. Burnham, formerly CO 18th AAA Gun Battalion.

CAMP STEWART, GEORGIA

Brigadier General Richard W. Mayo arrived at Camp Stewart in March to command the Third Army AAA Training Center. His last assignment was in Korea where he commanded the 5th FA Group and served as the artillery officer of the II ROK Corps. Both American and Korean field artillery were in his command. Under battle conditions he directed the organization and training of 26 ROK FA battalions and nine artillery division headquarters.

General Mayo began his Army service as an enlisted man in 1920. Graduating from USMA in 1926, he has served since in the Field Artillery. He was a member of the 1928 and 1932 Olympic pentathlon teams and was the coach and captain of the 1936 team. His sports are the five which comprise the pentathlon: riding, track, fencing, swimming and shooting.

Colonel Wm. A. Cauthen serves as General Mayo's Chief of Staff. Others on the General Staff include: Major Bernard D. Reams, G1; Lt. Col. Henry M. Reed, G2; Lt. Col. Albert C. Williams, G3; Lt. Col. Frank E. Terry, G4.



U.S. Army Photo

Brig. Gen. Richard W. Mayo

The 13th AAA Group under Colonel Wm. C. Mahoney, Jr., heads up the AAA units. Major Carl D. Arnold commands the 38th AAA Gun Battalion; Lt. Col. Norman E. Cole, the 550th; Major Frank V. Pechulis, the 551st; Lt. Col. F. J. Lagasse, the 554th; and Major Robert W. McCartney, the 549th.

Major Aubrey E. Shelley, Brigade S1, has orders to the Panama Canal Zone. Captains A. E. Conn, Assistant S3 and N. T. Sheldon, Assistant S1 have orders to USAFFE.

Lt. Col. Wm. A. Stricklen commands the 8th AAA AW Battalion at Camp Lucas, Michigan.

Major G. W. Seabrook, III, relieved Lt. Col. Burnham in the 18th AAA Gun Battalion.

Lt. Col. Wm. A. Brinkerhoff commands the 79th AAA Gun Battalion; Lt. Col. Stephen C. Farris, the 86th; Lt. Col. F. W. Jacks, the 99th; Lt. Col. Stephen T. Kosiorek, the 504th; Lt. Col. Albert M. Wilcox, the 516th and Major Hugh E. Jordan the 734th.

52nd AAA BRIGADE

Brig. Gen. Legare K. Tarrant,
Commanding

Colonel Frank H. Shepardson, Deputy Commander for Operations, leaves in August to attend Air War College class No. 54 at Maxwell Air Force Base.

Colonel Arthur L. Sanford, Jr., Commanding Officer, 80th AAA Group, leaves soon to attend the Army War College, Carlisle Barracks, Pennsylvania.

Lt. Colonel Robert W. Molloy, former CO 526th AAA Gun Bn (120mm), is now Brigade S3, with Major Harry Landsman as assistant.

Lt. Colonel Willis T. Lind, former Brigade S4, is now CO of the 526th AAA Gun Bn (120mm).

Lt. Colonel William A. DePalo, from TUSAG-JAMMAT AAA Section, Istanbul, Turkey, is now Brigade S4.

The Brigade resumed annual target practice firing at Montauk Point, L. I., on 4 May 1953. Firing had been suspended in February.



U.S. Army Photo
Best Battery Award to 1st Lt. Conrad X. Miser, CO Btry C, 740th AAA Gun Bn., by Col. W. H. Murray, CO 30th AAA Group, at Fort Funston, Calif.

15th AAA AW BN. (SP) AWARDS

BRONZE STAR MEDAL (V)

Lt. Col. Bruch H. Johnson
1st Lt. Chester L. McKinney
1st Lt. Allan D. Shepersky
Sgt. Harold E. Anderson
Sgt. Gerald R. Seifer
Sgt. Lee A. Williams
Pfc. Harold H. Patchett

BRONZE STAR MEDAL

Major Alva E. Drake
Capt. Edward R. Chandler
Capt. James B. Cochran, Jr.
Capt. Charles L. Douthitt
Capt. John R. Kennedy

COMMENDATION RIBBON

1st Lt. Ernest L. Bengston, Jr. (Chap)
1st Lt. Arthur C. Hartis
1st Lt. Charles F. Lyons
1st Lt. Allan D. Shepersky
WOJG J. P. Mitchell
M/Sgt. Lamar Alewine
M/Sgt. Leslie L. Devine
Sfc Ralph H. Dellinger
Sfc Roy R. Lewis (Cluster)
Sgt. Allen F. Joseph
Cpl. Jack M. Hughey

PFC 'Borrows' A Tank Gun To Destroy Chinese Bunker*

With the 2d Inf. Div., Korea—A 20-year-old crew member of a 2d Div. quad-fifty position recently "borrowed" a tank gun and blasted apart a Chinese Communist bunker with one shell.

PFC Eugene Umaske, a right cannoneer on a half-inch howitzer position at A Btry., 82d AAA AW (SP) Bn., spotted the Reds building a big bunker in the distance.

He decided it was too far for the quad-fifty to destroy, so he strolled over to a nearby tank position.

"Say, I found a Red bunker way back there," Umaske told the UN troops manning the tank. "Can I borrow your 90 millimeter a minute?"

"Go right ahead," the allied soldiers told him. Whereupon the Indianhead ack-ack artilleryman estimated the range, aimed the piece, loaded the weapon and while the UN crew watched fascinated, fired one round.

It punched right into the almost completed enemy position, flattening the structure.

*Army Times, May 16, 1953.

Ack-Ack Grenades

Two Marine Corsair pilots reported a new Communist antiaircraft weapon. Red troops, standing on high hills, threw hand grenades at them.

Captains Lawrence N. Crawley and Bradford N. Slenning, both members of MAG-12's "Devilcats" squadron, reported the incident. They were searching for the pilot of a downed Air Force F-84 Thunderjet just south of Wonsan when the "new weapon" was unveiled.

After making low searching runs for nearly two hours, the Marines were about to return to their base when they spotted 15 enemy troops on the ridge lines. The Reds were nearly as high as the Marine planes because the fighter-bombers were searching the valleys.

After firing .30 and .50 slugs at the planes, the Red troopers wound up and pitched the grenades.

"The first time I saw one come toward me I even ducked," Capt. Slenning reported.

Both Corsairs returned with numerous small arms damage, but none of it was due to grenades.

The Marines didn't return the fire because it might have jeopardized the life of the pilot who may have been a captive of the Reds.

PIO, FMAW

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AAA OCS CLOSES

By MAJOR ROGER L. STELTZNER

Operations Officer, OCS

ON 17 July 1953 when Class Number 14 walk across the stage of Theater Number 1 at Fort Bliss to receive their diplomas the Antiaircraft Officer Candidate School will pass into history after nineteen months of operation.

It will have graduated approximately 1175 successful candidates for commissions. From the earlier classes many graduates are serving in Korea, many are battery commanders, and some are serving in staff positions as battalion intelligence and operations officers, as well as motor and supply officers. Information received from commanders in the field has been that these graduates are held in high esteem for their efficiency and ability to get the job done.

Class Number 13, under the guiding hand of Major Peter M. Furguele, Senior Tactical Officer, had the distinction of graduating the 1000th candidate on 16 April 1953. He is Second Lieutenant Winfield C. Boyd, Jr., of Rosemont, Pennsylvania. Boyd was a member of a class of 91 who were commissioned on this date.

Of these 91 graduates, 10 were designated Distinguished Graduates. They were Second Lieutenants Charles E. Talmage, who was also Honor Graduate; Jack C. Bollinger; Richard C. Duffus;

Sidney R. Kliesing; Milton D. Mobley; Claude S. Morris, Jr.; James M. Oswalt; Frank R. Pease; Arthur W. Storer; and Gene F. Wilson.

Distinguished Graduates have the opportunity to apply for Regular Army commissions within a year of graduation.

The Officer Candidate School at Fort Bliss was inaugurated 14 October 1951 under its first Director, Colonel Robert H. Krueger. When Colonel Krueger left the school in August, 1952 to become the commander of Camp Drake in Japan, Colonel Kenneth R. Kenerick took over the duties of Officer Candidate School Director. Of the officers who were on the ground floor at the start only three remain. They are Lt. Colonel George J. Bayerle, Jr., Assistant Director; Lt. Colonel J. E. Olivares, President of the Officer Candidate Board, and who will retire from the Army this June; and Major Asa P. Gray, Jr., first the Operations Officer and currently the Senior Tactical Officer for the one remaining candidate class.

Throughout its history the school maintained the attitude of self-criticism and constantly made efforts to improve its product, the platoon leader.

Experience of the school reveals that the candidate most likely to succeed is

between the ages of 20 and 26, with at least 116 AGCT and an OCT of 121 or more, who has not had too much military experience (from one to five years only), and at least a year of college. Marital status, his basic component, previous combat service and the Service Area he comes from appear to have little bearing on a candidate's chances to successfully complete the school.

Closing of the Officer Candidate School at Fort Bliss does not mean that the branch will receive no further OCS trained officers. Rather, 40% of the Artillery candidates will be earmarked by The Department of The Army for Antiaircraft prior to their reception at Fort Sill. Upon completion of the 22 weeks of school at Fort Sill and commissioning, the Antiaircraft graduates will attend an eight week school at Fort Bliss to indoctrinate them into the techniques of their branch. Then they will be sent to their first duty assignment.

"Well done" can be written of the job done over the months the school has operated. The best traditions of the Officer Corps have been maintained. Duty, Honor, Country have been instilled into about 1175 young officers. "Well done," indeed.



The Graduating Class No. 13 presents itself to the Reviewing Officer.

U.S. Army Photo

ROTC CAMP

By 2D LT. TOM CATLOW, Summer Camp PIO

THE largest antiaircraft artillery ROTC Summer Camp ever held at Fort Bliss is scheduled at the Antiaircraft Artillery and Guided Missile Center, from June 20th through July 31st. One thousand, eight hundred cadets will receive instruction at the west Texas post during the six-week encampment.

Major General S. R. Mickelsen, Commanding General of the AA & GM Center, is the camp commander. Colonel E. R. Crowell, Professor of Military Science and Tactics at Texas Western College, El Paso, has been named the Deputy Camp Commander for the second consecutive year.

The cadets will come from twenty-seven universities and colleges in the United States and Puerto Rico. The latter is sending 154 men, the largest group thus far scheduled for the camp. In addition to cadets from these twenty-seven schools, a possible 300 more men from universities with branch general units may attend the encampment.

Instructors for the summer training period will be officers and enlisted men currently on duty with ROTC units in schools in the continental United States and Puerto Rico. Additional instructors will be furnished from personnel at Fort Bliss.

Training will stress practical field-type work. It will give the cadets a chance to practice the academic antiaircraft artillery subjects studied during the academic year. Latest AA weapons and equipment, including the M-33 Fire Control Unit, the "Skysweeper," and the T141 Twin 40mm gun will be used in the instruction.

Major attention will be given to light and medium AA crew drills and firing. The class will be divided into two groups, each group alternating on the 90mm guns, while the other drills on automatic weapons. This method of instruction, combined with the committee system, insures each cadet thorough instruction and practice.

A general breakdown of the training schedule shows seventy-four hours to be spent on quadruple-mount 50 caliber and twin-mount 40mm automatic weapons. Sixty-nine hours will be spent on



U.S. Army Photo

Colonel Evans R. Crowell, PMS & T at Texas Western College, El Paso, ROTC Deputy Camp Commander.

the 90mm guns. After each group finishes practicing with weapons in the gun parks, it will move to the million and a half acre Fort Bliss ranges for target practice.

Twenty hours of instruction have been designated for a practice reconnaissance and in emplacing 90mm antiaircraft artillery gun batteries. The cadets will then fire a tactical problem from the positions.

Rifle marksmanship has a prominent place on the schedule. Thirty hours will be spent on the preliminary rifle instruction circle and small-arms ranges. Each cadet will have the chance to qualify on the M2 carbine.

Probably the most interesting class scheduled will be a display of the Army's newest AA cannon, the "Skysweeper." There will be a lecture and demonstration on the new 75mm weapon.

A visit to White Sands Proving Ground is set up to give a short indoctrination in guided missiles. The trip will take about half a day.

Field artillery technique will also be covered by the ROTC cadets in the last phase of their course. The field artillery work is organized to cover forward observing, laying in the battery, and will include instruction on the guns.

While at Fort Bliss the cadets will be quartered in ten buildings of the re-

cently completed permanent troop housing on the main post. In this group of ten buildings will be the camp headquarters, along with the camp BOQ. Another of the buildings will house a post exchange set up expressly for the cadets. The ROTC troops will be the first occupants of these new barracks.

Final ceremonies of the encampment will feature a formal retreat parade. Fort Bliss and Summer Camp officials will make up the reviewing party. Individual awards for proficiency will be given to distinguished military cadets, and to the college graduates who have completed the summer course successfully will go commissions as second lieutenants in the Army Reserves.

ARMY TO SET UP NIKE BATTERIES FOR AA DEFENSE

Secretary of the Army Robert T. Stevens has announced that two of the Army's newest weapons will be teamed to bolster the nation's antiaircraft system in the near future.

The two weapons—the Nike and the Skysweeper—will complement each other around principal population and industrial centers, the secretary said.

Mr. Stevens revealed that action has been initiated to establish antiaircraft battalions equipped with the Nike guided missiles. The Skysweeper, only recently made public, is an antiaircraft gun which can track all enemy planes and is specially effective against lower altitude attacks.

The Nike will take care of any high-altitude intruders and can be fired day or night in foul or fair weather. It is reputed to be able to hit enemy aircraft or missiles traveling at supersonic speeds.

The Army had revealed last October that tests on the Nike had justified its use and that tactical and technical training of officers and men had gotten under way at the Guided Missiles Center, Ft. Bliss, and at the White Sands Proving Grounds, Las Cruces, N. M.

The organization and location of antiaircraft units converted to the employment of the Nike will be on a progressive basis, and the first are expected to be physically established this summer.

Distribution of School Instructional Material

By **LT. COL. W. CRAIG BOYCE, JR.**

Executive, Dept. of Nonresident Instruction, AA & GM Br, TAS

THE interest in and numerous requests for lesson plans and manuscripts pertaining to antiaircraft artillery training indicate that more information on the efforts of the AA & GM Br, TAS, to distribute this material is needed throughout the service.

The school operates a Special Distribution List (SDL) to facilitate the circulation of training literature. Each lesson plan and manuscript published at the AA&GM Br, TAS, for resident use is carefully considered for its value to units in the field. Instructional material may be of interest to a specific type of unit or to all artillerymen. In any event, sufficient additional copies are printed to permit distribution of one copy to each concerned unit of battalion size or larger. If an item is of interest to a battalion it is also given distribution to all AAA groups and AAA brigades. The reverse is not necessarily true.

About once each month the accumulated material is reviewed, listed, packaged, and mailed direct to the designated units. In addition to the list of material a few brief informatory paragraphs are sent along. These paragraphs state the purpose of the SDL, ask for comments on how to improve or what to eliminate, and also refer the addressee to the Book Department of the school if additional copies are desired.

As an economy measure only one copy of each item is sent to a unit. The one copy will present resident instruction thought on the subject and will in many cases have to be modified for local use. If additional copies are desired they can be secured readily at a nominal cost. A standard lesson plans costs about five cents and manuscripts seldom cost more than ten cents.

It is recommended that requests by individuals for instructional material from

the school be processed through battalion, in order that effective screening and/or consolidation can be made.

Occasionally with the SDL will be distributed a discussion of some phase of artillery. As an example, a recent SDL had a single sheet on aircraft recognition. Comments and recommendations were solicited in order that published literature would more closely meet the requirements of using personnel. Also with the SDL are distributed such items as the Book Department Catalog, new Special Texts, pamphlets, addresses, AAA training film evaluations, and other items which will be of help to the unit commander and his staff.

The SDL can serve better in unit training if the function of the Special Distribution List is publicized in the unit and if the material contained in the SDL is made available to the people in the unit most directly concerned.

STATUS OF TRAINING LITERATURE

By **MAJOR B. G. OBERLIN**

A NEW field manual on a new piece of matériel is currently being printed and will soon be in distribution. This new publication, FM44-61, Self-Propelled Twin 40mm Gun (T141), describes the improved version of the well-known M19 which has proven valuable in surface as well as in antiaircraft missions in Korea. The new manual is illustrated with 37 figures.

FM 44-4 C2, which adds a general coverage of the antiaircraft fire control systems T33 and M33 to FM 44-4, AAA Guns, is in the hands of the printer. Distribution should be made in the next 30 days.

ST 44-150, Introduction to Guided Missiles, has been reprinted at AA & GM Br, TAS, for the fourth time since the original edition in 1949. The text

has been brought up to date, and illustrations and diagrams have been added to the many in the first edition.

Two new training circulars are expected to be in distribution by late summer 1953. TC (), Service of the AN/TPS-1D, is being reviewed at Army Field Forces in preparation for printing, and TC (), Safety Precautions for Guided Missile and Heavy Rocket Training, has gone to OCAFF for review.

ATP 44-300, AAA AW Bn (self-propelled) Divisional Type; ATP 44-301, AAA AW Bn (self-propelled) Nondivisional Type; ATP 44-302, AAA Towed AW Bn Nondivisional Type; ATP 44-310, AAA Gun Battalion; ATP 44-330, AAAOD; and ATP 44-360, AAA Brigade and Group, have been printed and

distributed. ATT 44-1 C1, AAA Gun Battalion (90mm), has also been printed and distributed.

The following publications are planned for production during fiscal year 1954:

Field Manuals

FM 44-33A, Service of Antiaircraft Fire Control System M33, is a new manual. It will not supersede FM 44-33 which was written for the T33 but will identify and describe the complex components of the newer M33 in great detail. Emplacement, march order, and drill are thoroughly covered in step-by-step instructions. Plentiful illustrations will make the text clear.

FM 44- (), Organization, Tactics, Fire Control, and Gunnery, T69 (Sky-



U.S. Army Photo

General Hodge, Army Field Forces Chief, demonstrates to Fort Bliss trainees the proper way to shoot in the combat assault course. Gen. Mickelsen and Col. Heathcote in right background and Lt. Frazier, instructor, observe.

sweeper), is a new manual.

FM 44- (), Service of Nike SAM, is a proposed manual to cover the drill and operation of the Nike surface-to-air guided missile.

FM 44- (), Tactics and Techniques, Nike SAM, will cover the organization, tactical employment, fire control, and gunnery for the Nike guided missile battalion.

FM 21-80, Recognition Training, will supersede FM 21-80, 1944. A careful study of the best techniques for teaching recognition was made before the manual was started.

FM 44-4, Antiaircraft Artillery Guns, will be a revision of the 1950 publication and will consolidate existing changes to the earlier manual.

FM 44-8, Antiaircraft Operations Center and Antiaircraft Artillery Information Service will be a revision of FM 44-8, 1944.

FM 44-60, Service of the 40mm Gun and Associated Fire Control Equipment, will supersede the manual of 1945.

FM 44-69, Service of the 75mm Gun Mount T69 (Skysweeper), will supersede the first Skysweeper manual published in 1951 and will bring the text on this weapon up to date.

Changes

Changes to two manuals, FM 44-2, Antiaircraft Artillery Automatic Weapons, and FM 44-1, Antiaircraft Artillery

Employment are being processed. The changes to FM 44-2 will incorporate the use of a defense analyzer for light anti-aircraft artillery and the principles of antiguerrilla and antiairborne employment. The changes to FM 44-1 will bring the basic manual up to date.

A change to FM 44-44, Service of Radio Set SCR-584, will cover the use of new IFF equipment.

Training Circulars

A new training circular, Tactical Control and Employment of Skysweeper, will present the current thought on organization, tactics, and logistical considerations for using units. It is proposed to expand this circular into a field manual in 1954.

TC (), Service of the MTQ-1 (AAOC), will cover drill, operation, and maintenance of this new service unit for antiaircraft operation centers.

Training Films

Shooting of three new films on Skysweeper has already started at Fort Bliss. These training films will show emplacement and march order, orientation and synchronization, and artillery drill for the Skysweeper.

Three training films on AAFCS M33 are being made in Chicago under the supervision of AA & GM Br, TAS. Start-stop procedure, orientation and synchronization, and fire missions for

the M33 will be covered in these films.

General Dahlquist

General John E. Dahlquist, Commanding General of Fourth Army, and since promoted to three stars, conducted the annual inspection of training and facilities at Fort Bliss, April 29 and 30 in his first visit to the post since he assumed command of the Fourth Army in March.

Military honors, including a 13-gun salute, were paid General Dahlquist by the 59th AAA Battalion and the Fort Bliss Band when he arrived at the post, April 28.

He took a sharp look at all activities on the post, including a night trip to the Fort Bliss range and a visit to the 1st Guided Missile Brigade.

AFF Board No. 4

AFF Board No. 4 now has a liaison officer from the Corps of Engineers, Major R. A. Billip. Other liaison officers at the Board include those from the Signal Corps, Ordnance, Marine Corps, British Army and Canadian Army.

The Board's Ordnance officer, Lt. Col. Elwyn N. Kirsten, is leaving for new duties at Aberdeen Proving Ground. His replacement will be Lt. Col. J. P. Traylor. . . . Lt. Col. William F. LaHatte of the Guided Missile Service Test Section is leaving for G4 duties in the Pentagon. . . . Capt. Armand M. Kolesar and Capt. E. M. Vinson, also of the GM Service Test Section, have left for the Far East Command.

Newcomers to the Board include: Major O. Garcia; Captains R. S. Craig and D. N. Gower; Lieutenants G. A. Amburgey and R. E. McDonald; and WO W. A. Desjardins. Major John Cusick has joined the detachment of the Board at Fort George G. Meade, Maryland.

Housing Project

The first 10 units of the new troop housing project now under construction at Fort Bliss were formally accepted by Major General S. R. Mickelsen, Fort Bliss Commander, in a brief ceremony, April 30.

The project, including 31 barracks to house approximately six battalions of troops along with motor parks for their use, is scheduled for completion in late summer.

BOOK REVIEWS

HISTORY OF THE GERMAN GENERAL STAFF. By Walter Goerlitz. Frederick A. Praeger, Inc. 508 pages. \$7.50.

For years, the German General Staff has stood in American eyes as the epitome of autocratic ultra-militarism. And yet, there is no denying that this same organization, existing as a model agency for operational direction of armies, has had a tremendously important influence upon the organizational development of armies all over the world.

Actually, this organizational influence is only half the picture. The historical impact of the German General Staff must be measured also in terms of its effects upon the actions of Germany as a nation. The two events which have had the most far-reaching influence during the present century are the two World Wars. In both, it was the German General Staff which in large part guided the course of German national policy.

The sinister quality of the actions of the German General Staff has colored American attitudes toward the characteristics of that organization as an administrative device for the direction of armies. In Walter Goerlitz's book there is presented, for the first time, a dispassionate account of the German General Staff, both of its institutional development and of its activities in the politico-military field. The writer approaches his subject through the men who were most influential in making it what it was, both for good and ill—Gneisenau, Scharnhorst, Clausewitz, Schlieffen, the two Moltkes, and names less historical but more familiar such as Seeckt, Fritsch and Brauchitsch. This method holds the reader's interest better than might be the case if the book had been merely a treatise upon organizational relationships. At the same time, it is to be regretted that there are not included a few organizational charts to clarify the complex relationships which developed.

While Goerlitz provides background to illustrate the origins of the staff in rudimentary form in the seventeenth century, and demonstrates how it was the development of the mass armies beginning with the Napoleonic wars

which required the creation of the first organization which was truly a general staff, he devotes a full half of the book to World War II and its immediate causes.

This book is one which, because of its subject matter alone, is of fundamental importance to the soldier who is a serious student of his profession. It will be equally essential as a text in the study of military history, of public administration and of geopolitics. All in all, it may be said that not for a long time has there been a new book of so basic a significance in the military field.

JOHN B. B. TRUSSELL, JR.
Lt. Col., Artillery

WINGS FOR PEACE. By Brig. Gen. Bonner Fellers, U. S. Army, Ret. 248 pp. Chicago: Henry Regnery Co. \$3.50.

Here is an interesting book, aptly timed, easy to read and provocative in its aim. General Fellers' style is brief, clear and positive; short sentences and paragraphs and an absence of involved discussion point out markedly the facts and ideas he seeks to hammer home.

Although written by a "ground general," it supports Major Alexander P. de Seversky's "Air Power: Key to Survival." It will increase the blood pressure of most ground force generals and their planning staffs; rile our admirals, but certainly please the U. S. Air Force. Despite all this, General Fellers' book possesses merit and should be read.

He challenges our ability to cope with the Reds on the basis that our present military setup reflects the roles and missions of World Wars I and II and that it is not designed to provide for our survival in the early phases of a Third World War. He takes a dim view of the ability of the NATO defense plan to cope with a major effort by the Soviets.

General Fellers blames the limited war in Korea on our State Department and on the "infantry generals in the Pentagon who are dedicated to the principle that war can be decided finally only by ground combat." Insofar as this reviewer is aware, nothing has occurred to disprove the infantry generals' idea, especially in Korea and Indo-China. Ob-

viously, had aggressive air, naval and ground combat been combined in the Manchurian-Korean theater, that war would have already ended in a victory for the U.N. General MacArthur's recent letter to Senator Byrd hits the nail on the head: "... the lack of the will for victory ..."

The author of this book claims that the development of a powerful strategic air force will save dollars and manpower. Assuming an overall defense budget of 40 billions, he would give 27 to the Air Force and the rest, 13 billion, to the Army and Navy together; build the Air Force to 250 groups but limit the Army to 10 airborne divisions. He purports by statistical analysis to show that air power is more economical than infantry.

There are many interesting and challenging statements to be found in *Wings for Peace*. Its presentation seems somewhat too one-sided, an attempted oversimplification of a problem that has become complicated.

Admitting the tremendous potentialities of long-range air power, nevertheless it cannot yet be concluded that the problem of Red domination in Asia can be solved as simply as General Fellers seems to believe. Keep our present ground and naval strengths, increase air to a sensible total; but spend more efficiently by cutting out luxuries, waste and outmoded weapons.

WM. COOPER FOOTE
Colonel, U. S. Army, Retired

MAJOR CAMPAIGN SPEECHES OF ADLAI E. STEVENSON, with an introduction by the author. Random House, N. Y. 320 pages. \$3.50.

Democrats and Republicans alike should get a great deal of pleasure, from this collection of forthright, scholarly, and witty speeches. Stevenson no doubt won many friends with his candor and ability to make people laugh, at the Republicans as well as the Democrats. This collection of speeches is worthwhile reading no matter what your political opinion may be.

THE NEW MILITARY AND NAVAL DICTIONARY, edited by Frank Gaynor, Philosophical Library, New York.

A very comprehensive and up-to-date definitive glossary containing over 7000 terms, used by all branches of the armed forces.

NO STONE UNTURNED. By Ian R. Hamilton. New York: Funk & Wagnalls Co., 1952. 191 pages. \$3.75.

The account, by one of the participants, of the theft of the Stone of Scone from Westminster Abbey has special interest in a Coronation year. However, the impudence and audacity of the escapade, together with the complete confusion into which it apparently threw the traditionally staid and methodically efficient Scotland Yard, make for highly entertaining reading at any time.

The students who stole the "Stone of Destiny" were engaged in no mere prank. They were ardent Scottish Nationalists, seeking to focus public attention upon their cause. For the American reader, unfamiliar with the details of Britain's domestic politics, the somewhat shrill polemics of this book are less interesting than the details of the theft itself. But the account of the actual unfolding of the plot is of compelling interest.

The moderation with which the culprits were treated after they were caught furnishes a revealing picture of the British character—especially enlightening in contrast to the attitude of the political extremists who caused the whole furore.—J. B. B. T., Jr.

STOLEN JOURNEY. By Oliver Philpot. New York: E. P. Dutton & Co., Inc., 1952. 448 pages. \$4.50.

In the growing mass of literature on prison-camp escapes, especially by personnel of the RAF, this book stands out as one of the most readable. Unlike some of the others, this author does not begin his narrative in the Stalag, with the plan for the successful break about to mature; instead, he begins with the moment when he ditches his Beaufort in the North Sea. We accompany him and his crew in their dinghy to rescue, which in this case also means capture, and then through their various moves through the German POW camp system.

Primarily, however, this book is not an account of prison life as such. Once behind the wire, the preoccupation of the book, as well as of the prisoners, is with escape. After repeated failures, success is finally achieved in the famous

"wooden horse" escape. However, this is no mere repetition of the account of that event which was published several years ago. It provides not only a new slant on that particular episode but contains much material which is new both on the escape and on POW life.

Stolen Journey offers the military reader food for considerable thought. More than that, it is a good yarn in its own right.—J. B. B. T., Jr.

U-BOAT 977. By Heinz Schaeffer. New York: W. W. Norton & Company, Inc., 1952. 260 pages. \$3.50.

This is a book to make the reader angry while at the same time arousing his admiration for an impressive feat of seamanship. Schaeffer lets the reader squint through the eyepiece of his periscope at some of the destruction wrought by the crews and ships which stalked their prey from below the surface. There are tense as well as triumphant moments, with the depth charges falling ever closer.

The chief concern of this book, however, is with the long flight, after VE-Day, from European waters to Argentina. The author and his crew, by virtue of great daring and endurance, succeeded in eluding the Allied navies, only to have their sub interned upon arrival at their destination.

It is the author's attitude which is so irritating. One must admire his ability to carry off his outrageous intention, but there can be no approval of the act itself, no condoning of the motivation. However, this frankly "unreconstructed" German should provide us with a valuable lesson.—J. B. B. T., Jr.

THE SOVIET IMPACT ON SOCIETY by Dagobert D. Runes. Published by the Philosophical Library, New York. 202 pages. \$3.75.

Here is an unusual case of a book being published fifteen years after it was written. The publisher's decision to print the book now without changing the original manuscript was based mainly on three factors:

"1. The amazing foresight of the author in connection with the expansionary intentions of the U.S.S.R. in Asia.

"2. The author's thorough analysis of the economic fallacies of Marxism.

"3. The author's early recognition of Stalin's anti-Semitic tendencies which had come out into the open at the time of our accepting the manuscript."

Dr. Runes, in this trenchant and clear volume, presents a critical analysis of Marxian doctrine and the Soviet distortion of this dogma while reducing it to practice. He makes it abundantly clear again that the facts pertaining to the nature of Soviet Communism, which are only now becoming generally recognized in the western world, were available for anyone's examination 20 and more years ago. This book is a useful addition to any collection on the subject.—M. N. K.

BATTLE CRY. By Leon Uris. G. P. Putnam's Sons, New York. \$3.75.

A story of Marines in World War II, from boot camp to battle, by an enlisted Marine about the members of a radio squad, their life, their women. Warm characters, natural. In the tone and language of the barracks and with fine loyalty to the Marine Corps.

THE GREAT ESCAPES. Selected and edited by Basil Davenport. William Sloane Associates, NYC. 409 pages. \$5.50.

Twenty-eight famous escape stories, including Mohammed from Mecca, Mary Queen of Scots from Lochleven Castle, Napoleon after Waterloo, Winston Churchill from Pretoria, Louis XVI and Marie Antoinette and others equally engaging.

"For stories of escape appeal to the most fundamental of all human instincts, that of self preservation: We want to get away from Mr. MacGregor even before we want to marry a princess and live happily for ever after."

A collection of high literary merit, and one you will like right by your reading lamp.

YOUR GREATEST POWER, by J. Martin Kohe. The Ralston Publishing Co., Cleveland, O. 61 pages. \$1.00.

A moving pep talk on the Power to choose—to choose wealth—conditions—personality—happiness. Brief and to the point.

News and Comment

Merger

No agreement has yet been reached on the proposed merger with the Association of the U. S. Army. We continue to publish the *ANTI-AIRCRAFT JOURNAL* on normal schedule. The deadline date for articles and other matter for the July-August issue will be July the first.

Lieutenant General Lyman L. Lemnitzer, Deputy Chief of Staff for Plans and Research, and Vice President of the U. S. Antiaircraft Association, returned on May 23rd from Great Britain where he delivered the Kermit Roosevelt Exchange lectures.

General Lemnitzer arrived in England by the liner *United States* on April 27 and visited first the Southern Command and the Royal Military College of Science. His first lecture was given at the Staff College, Camberley, April 30. On May the 4th he addressed the Royal Military Academy at Sandhurst. He then visited the Scottish Command and later returned to lecture at the Imperial Defense College in London on May 11.

Following his visits in England, General Lemnitzer departed for the continent to visit NATO and the various U. S. Headquarters.

Lieutenant General Sir George Erskine, C-I-C, Eastern Command, United Kingdom, visited this country in April to deliver the Kermit Roosevelt Exchange lectures at the Army War College, the Military Academy, and the C & G. S. College.

The funds for these lectures were established by the widow of the late Kermit Roosevelt to promote closer relationship between the military services of the United States and Great Britain.

Meteorology

Under *Meteorology For AAA* in the March-April issue we pointed out the need for officer supervision and help in our Met stations; the need to check the accuracy of the met messages, and the

fact that Major H. R. Jackson and Cpl. J. G. Torian, meteorological instructors in the AA & GM School, had a splendid method of checking the wind data by using the standard slide rule in a simplified solution.

Their procedure is presented in this issue in the article, "An Application of Simplified Wind Determination." It is worth careful study in each AAA brigade, group, and gun battalion. The first thing you will note is their profuse apology. Don't let that stop you. We almost did, and came near missing out on it completely.

We were also a bit rusty on our operation of the slip stick, having forgotten about using that index on the rear of the slide rule at the right end. Anyway, we finally pushed through to find what we consider a practical and valuable solution.

The article has the approval of both the AA & GM Branch, TAS, and the Chief of the Army Field Forces. However, they emphasize that the outlined procedure is not to be considered a substitute for the standard procedure.

Air Combat Scoreboard

Since the Korean War started and up to March 1, 1953, FEAF has sustained aircraft losses as follows:

To ground antiaircraft	495
To aerial combat	97
To other causes	119
Total	711
USMC land based a/c losses	104
Other land based UN a/c losses	73

Enemy Losses:

Destroyed—780, including 611 MIG-15's; probably destroyed—139, including 112 MIG-15's; damaged—863, including 775 MIG-15's (virtually all enemy losses in air-to-air combat).

Other USAF Activities:

Sorties flown—604,017; vehicles destroyed—64,579; railcars destroyed—8,612; bridges destroyed—628; tanks destroyed—1,140; tunnels—770; and troop casualties inflicted—144,795.

Army Aviation

Army plans to use NCO pilots in its future flying structure, and to boost its present pilot strength to 2,600. . . . An Army aviation school has replaced Air Training Department of Artillery School at Ft. Sill, Okla.

General Officer Promotions

Brigadier General Sam C. Russell was promoted to that grade in March and assigned to duty in Washington as the Army Deputy G4 for Foreign Military Assistance. He was originally slated to command the 45th AAA Brigade; however, when he completed his tour of duty in the military assistance program in Europe and came back to the Pentagon to make his final reports his orders were changed.

General Russell graduated from USMA in 1932 and joined the Coast Artillery. He served with AAA in Europe in World War II. His graduation at the National War College in 1947 was followed by a tour of duty with the General Staff in Washington.

Brigadier General Tom V. Stayton's promotion was recently announced. He took command of the 35th AAA Brigade, Fort Meade, Maryland, in February following his tour of duty in Korea as the executive officer of the 3rd Infantry Division Artillery, and a brief tour with OCAFF.

General Stayton entered the Army as a private in 1926. He graduated from USMA in 1931 and was commissioned in the Coast Artillery. During World War II he served with the AAA in Panama and with Army Service Forces in Washington. He graduated from the National War College in 1950.

Retired

Colonel Francis B. Kane retired in Washington, D. C., April the 30th for physical disability after 30 years service. He had been serving in the Pentagon as the Chief of the Special Weapons Branch, R & D, Army G4.

Colonel Kane has accepted a position with Westinghouse in Baltimore. He and Mrs. Kane will reside on Admiral Road, North Severna Park, Md.

General Officers Assignments

Brigadier General James G. Devine, 40th AAA Brigade, to Camp Stoneman; to await orders.

Brigadier General Robert J. Wood, 53rd AAA Brigade, to USAFFE.

Colonels To Attend National War College

Kenneth R. Kenerick, Ft. Bliss, Texas
John C. Steele, North Richland, Wash.
Yale H. Wolfe, Washington, D. C.

Colonels To Attend Army War College

N. W. Baltzer, 32nd AAA Brig., Eng.
Walter C. Conway, FECOM
Seymour I. Gilman, Washington, D. C.
Robert W. Hain, Hamilton AFB, Calif.
Henry D. Lind, Ft. Lawton, Wash.
J. K. McCormick, San Francisco, Calif.
Francis M. McGoldrick, Ft. Bliss, Texas
Alvin D. Robbins, Ft. Meade, Maryland
A. L. Sanford, Jr., Ft. Wadsworth, N.Y.
Norman A. Skinrood, FECOM
Cecil E. Spann, Jr., Broughton, Penna.
John DuV. Stevens, Washington, D. C.
Oren Swain, Ft. Bliss, Texas
G. V. Underwood, Jr., Wash., D. C.

Lieutenant Colonels To Attend Armed Forces Staff College

Ned E. Ackner, Washington, D. C.
Charles F. Heasty, Princeton, N. J.
James R. Laney, Jr., Ft. Monroe, Va.
George B. Webster, Jr., Ft. Monroe, Va.
E. A. H. Woodman, Ft. Monroe, Va.

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R. P. Murphy, 899 AAA AW Bn (SP)
Edward S. Rice, Hq., 7th Army
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B. A. Spiller, USAREUR-OPOT Div.
William W. Watson, Fort Bliss, Texas
Edison E. Yates, Fort Bliss, Texas

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Donald C. McNair, Blacksburg, Va.
M. R. McCarthy, Hamilton AFB, Calif.
Bruce V. Silvis, Fort Sill, Okla.
Llewellyn Sobke, Fort Sill, Okla.
Alexander A. Zaresky, Fort Hayes, Ohio

Recent Assignments

Colonel Calvin Partin from 12th AAA Group in Germany to PMS & T Utah State, Logan, Utah.

Colonel H. E. Strickland from FECOM to Senior Instructor, Mil. Dist., Concord, N. H.

Colonel Wm. H. Hennig, NWC to Army General Staff, G2, Pentagon.

Colonel Tom W. Sills, NWC to Army General Staff, G4, Pentagon.

Colonel Marian G. Pohl, Rome, Italy to National Industrial College.

Lt. Colonel Harry V. Heim, Newburgh, N. Y., to Ft. Bliss, Texas.

Colonel Iver A. Peterson from Washington, D. C. to 1st GM Group, Fort Bliss, Texas.

Colonel Roy E. Hattan from Washington, D. C. to Hq Fourth Army, Ft. Sam Houston, Texas.

Lt. Col. Richard G. Thomas from Washington, D. C. to 1st GM Group, Ft. Bliss, Texas.

Lt. Col. Jack E. Barton from Ft. Meade, Md., to Hq Army AA Command, Ent AFB, Colorado.

Colonel Albert G. Franklin, from duty as Chairman of the Allied Liaison Committee in Berlin to Deputy Commander, Eastern Army AA Command, Middletown, N. Y.

Colonel Franklin replaced Colonel Peter Schmick who departed in April via Fort Sill to duty as a field artillery commander in USAFFE.

Colonel Joe D. Moss, from OCSA, Washington, D. C., to Post Commander, Fort Leslie J. McNair, D. C.

Colonel Perry McK. Smith from West Point to Hq. Allied Forces Southern Europe, Naples, Italy.

Colonel Edward R. Hempstead, from Wilmington, Del., to 26th AAA Group, Fort Lawton, Washington.

Colonel Ovid T. Forman, from Washington, D. C., to OCAFF, Fort Monroe, Virginia.

Colonel Peter W. Shunk, from Fort Bliss, Texas, to Washington, D. C.

Colonel Eugene W. Hiddleston, from Fort Leavenworth, Kansas, to University of Delaware as P.M.S. & T.

Colonel Edward T. Ashworth, from National War College to Hq Army AA Command, Ent Air Force Base, Colorado.

Colonel Henry G. McFeely, from Army G1 Washington, D. C., to Hq Sixth Army, San Francisco, Calif.

Colonel Walter A. Rude, from Western Army AA Command, to P.M.S. & T. University of Washington, Seattle.

Colonel Ernest B. Thompson, from Army G3, Washington, D. C., to P.M.S. & T., Georgia School of Technology, Atlanta, Georgia.

Colonel Stuart M. Alley, from Carlisle Barracks, Penna., to Hq Eastern Army AA Command.

Colonel Joseph C. Conell, from Washington, D. C., to 24th AAA Group, Swarthmore, Pa.

Colonel Avery J. Cooper, Jr., from Carlisle Barracks, Pa., to Hq. 45th AAA Brigade, Fort Sheridan, Ill.

Colonel Arthur C. Peterson, from 24th AAA Group, Swarthmore, Pa., to Washington, D. C.

Colonel Robert A. Turner, from Carlisle Barracks, Pa., to Army G3, Washington, D. C.

Colonel Ramon C. Dougan, Naval War College to Europe.

Colonel Wm. F. Spurgin, Air University to USAFFE.

Lt. Col. Paul O. Franson, from Boston, Mass., to student, Tulane University.

Lt. Col. Clarence T. Marsh, Jr., from West Point to USARCARIB, Fort Amador, C. Z.

Lt. Col. Albert F. Rollins, from Fort Bliss, Texas, to Washington, D. C.

Lt. Col. George W. Best, Jr., from Fort Meade, Maryland to 549th AAA Gun Bn., Camp Stewart, Georgia.

Lt. Col. Walter Killilae, from McChord AF Base, Washington, to student, Vanderbilt University.

Lt. Col. Gerald A. Lake and Lt. Col. Marcus L. Parsons, from Fort Leavenworth, Kansas to Hq Army AA Command, Ent AF Base, Colorado.

Lt. Col. Richard W. Owen, Associate Editor this JOURNAL from Washington, D. C., to his new assignment in Bremerhaven, Germany.

Lt. Col. Thomas H. Barfield, from Fort Meade, Maryland to Fort Bliss, Texas.

Artillery Officer Advanced Course

MAJORS:

Kirby A. Gean, Killeen AFB, Texas
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Wm. C. Linton, Jr., Ft. Bliss, Texas
Paul A. Morton, Washington, D. C.
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Guardsman Wins USMA

Appointment

Pfc Richard Pfeiffer, 101st AAA Gun Battalion, Albany, New York National Guard has recently been announced as the winner of an appointment to West Point through the competitive examinations held in March.

Study The Mistakes, Too

In *The Red Army Today* Colonel Louis Ely allows General Alexandrov to quote Joseph Stalin himself:

"... the entire training of the Army is to be based on the skillful use of experience of the war. This experience should also be thoroughly utilized for the theoretical education of officers."

Then Alexandrov continues:

"In the Frunze Military Academy in Moscow where I served as an instructor we collected war studies as rapidly as possible and endeavored to draw from them all possible lessons which might be made applicable to current training. Frequently it was difficult to perform honest work because the Party line tended to draw lessons only from the Red victories, often neglecting the accounts of Soviet defeats. The development of new doctrine seems to be lagging, in spite of the fact that Stalin correctly has stated that 'the art of war makes rapid and continuous progress,' and that fixed doctrine therefore is not sound. The tendency to praise the battles of the local general discourages advancement of new ideas, in spite of the

Generalissimo's statement."

This is a matter we can well afford to study, too. True, our freedom of speech and free press give us great strength, but we are far from free of the weakness which Colonel Ely studies.

It is the business of a service journal to help spread the word on the continuous progress in the art of war, but the record needs to be honest and forthright. Whether the story records a battery in target practice or an army in a campaign, the writer who has the knack and the nerve to weave the mistakes in with the successful accomplishments is well on the way to a great story.

Radar-Proof Plane

Science News Letter, February 28, 1953, reports that a plastic-treated material promises to make aircraft nearly radar-proof, to let supersonic jets fly even faster and to slash airframe construction costs by 80 per cent by cutting down the need for skilled labor and expensive equipment.

William E. Braham, chief engineer of the Zenith Plastics Co., Gardena, California, is quoted as reporting that some experimental parts of Fiberglas coated with Bakelite plastic resins have been made and tested successfully. The material is "almost completely electronically transparent."

To The Editor

After reading the article on "What Has Become Of The NCO" by Captain Mahon, my love for the military compels me to write you.

In regards to Captain Mahon's article, a word of praise is due and the admiration of the Non-Commissioned Officer for his thoughtfulness in the way he remembered us. There should be more like Captain Mahon in the military, which would do away with most of the run around and confusion which exists today.

Give the NCO the authority and responsibility which he is capable of deserving, and see whether or not you also will be forced to agree with Captain Mahon.

My sincere congratulations go to Captain Mahon for his outstanding article. Let's have more like it, and let the NCO know that he hasn't been forgotten.

SGT. THOMAS J. CLEMENS
Hq., Btry., 11th Marines
1st Marine Division
c/o FPO, San Francisco, Calif.

To the Editor

Our Senior Subscriber

To the Editor:

Herewith my check for \$3.00 in payment of my renewal for 1953—my 51st renewal!

WM. H. WILSON

Major Gen., U. S. Army, Retired
Burlington, Vermont

To the Editor:

Quite unsolicited on your part, I just wanted to tell you what a warm glow of recollection and perhaps a bit of nostalgia were afforded to me by the article in the March-April issue of the ANTI-

AIRCRAFT JOURNAL, "THE ANTI-AIRCRAFT JOURNAL and its Predecessors 1892-1953." Although I have moved into the fine print in the back of the Annual Army Register for some years now, I have kept up my subscription to the JOURNAL ever since, perhaps actuated by the sense of loyalty to the old Coast Artillery Corps with which we were indoctrinated by many of the familiar names in the current article, as for instance, Weaver, Hero, Gulick, and others.

The article was most interesting and intelligible to me, as naturally most of the items in the present day issues deal

with highly technical devices and methods and so are too advanced for old chaps who have passed out of the active picture. I am quite sure that I am joined in this small expression of appreciation of the article by the majority of retired officers who were either contributors or subscribers to the old *Coast Artillery Journal*, and to whom such terms as "the set-forward point," "time-range board," "powder blending," etc., were a part of the daily life of the old concrete artilleryman. The old *CA Journal* and *Artillery Notes* were certainly of great instructional and training value in those days.

I think that I can detect evidences of the careful research made by Cooper Foote that produced this article for which he should be commended.

With best wishes for the coming amalgamation of the ANTI-AIRCRAFT JOURNAL with the *Combat Forces Journal*,

Sincerely,

HARRY W. STARK
Colonel, USA Retired

Riverside,
California

To the Editor:

We transmit herewith our 100% renewal of subscriptions (25 in all) to the ANTI-AIRCRAFT JOURNAL (*Combat Forces Journal*).

Col. Duke and the officers of this organization wish at this time to express their appreciation for the JOURNAL as it has been to date. We hope sincerely that the personal relationship that has existed between the JOURNAL and its subscribers will continue after the merger has been effected.

NEIL E. ALLGOOD

Capt., 720th AAA Gun Bn, CAL NG
Adjutant

To the Editor:

Enclosed is my check for \$3.00 to cover the renewal of my subscription to the JOURNAL. I have always enjoyed our JOURNAL so very much, and I sincerely hope the *Combat Forces Journal* will give the AAA the coverage we need. I really hate to see our JOURNAL fold up. It has always been the best of all the service magazines.

TOM W. SILLS
Colonel, Arty



USMC Photo

Quick-Finding Sight designed by Tech. Sgt. Paul Cross, USMC (right).

To the Editor:

Enclosed is a view of a modification to the quick-finding sight on the M5A1 director. Originated and constructed by Technical Sergeant Paul Cross, USMC, who appears at far right in the picture, the modification is Cross' approach to quick, accurate target pickup.

The sight consists of a short length of pipe which has been attached to the quick-finding sight bracket by screws and has been drilled at each end for locking screws. Clamped in the sight is an M7A1 sight which has been reversed so that the original eyepiece is now facing the target.

Sergeant Cross has tested his sight during practice firing and maintains that once the sight has been oriented with the telescopes on the director, a target may be engaged by the range setter on the crosshairs of the M7A1 sight and immediately picked up by the trackers.

His tests during practice firing showed that from three to five seconds were saved in target pickup since the trackers were presented with a target which was already on the crosshairs in their scopes, and they weren't required to make large initial adjustments to get on target. The result was quicker pickup and less time loss before smooth tracking started.

The M7A1 sight is reversed so that the range setter may stand to the rear in the same position that he would normally assume when using the quick-finding sight and not have a loss of field.

W. E. HEMINGWAY
Major, USMC
Commander

A similar modification to the Directors M5A2 and M5A3 using the telescope, M7, replacing the present pickup sight, is now being employed at Fort Bliss to facilitate training of director crews. Ed.



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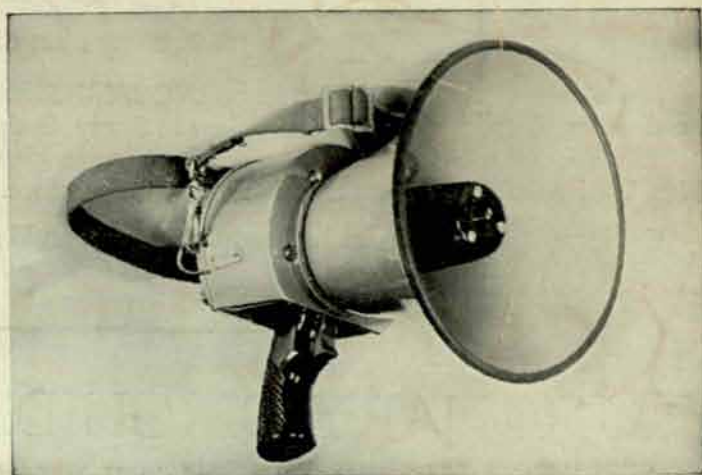
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